Canon

# Service Manual

ENGLISH EDITION

| | |
|---|---|
| EOS 5 QD | C12-8201 |
| EOS A2 | C12-8203 |
| EOS A2E | C12-8205 |
| EOS 5 | C12-8206 |

Canon
EOS 5
QUARTZ DATE

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CY8-1200-100

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| | |
|---|---|
| EOS 5 QD | C12-8201 |
| EOS A2 | C12-8204 |
| EOS A2E | C12-8205 |
| EOS 5 | C12-8206 |

# SERVICE MANUAL

## Application

This manual has been issued by the Photo Products Quality Assurance Division of Canon Inc. as a guide to repair for qualified camera technicians. This manual may cover products for several marketing areas and may contain information not pertinent to your particular product.

## Corrections

This manual may include typographical errors, or technical inaccuracies due to running improvements in the product. Service Manual Reports will be issued to inform you of changes. In some cases, we may issued a revised manual if circumstances warrant.

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# PREFACE

**This manual is constituted as outlined below, and contains the information necessary for service of the EOS 5,5QD/A2 and A2E. This manual covers three variations of the same product. The diferences are basically as outlined in the Marketing Area Differences table on the following page.**

## Part 1: General Information

**This section contain an outline, including features, specifications, control layout, etc. For actual operation procedures, refer to the Instruction Book accomping the camera.**

## Part 2: Technical Information

**This section contains technical information, especially concerning new technology used in the camera.**

## Part 3: Repair Information

**This section contains mechanical and electrical information necessary for repair and adjustment.**

## Part 4: Parts Catalog

**This section contains the parts catalog for the EOS 5, 5QD, A2 and A2E.**

## Part 5: Circuit Diagrams

# Marketing Area Differences

**This camera is marketed under different names depending on the marketing area. Certain features are also marketing area dependent; the most important being the deletion of the Eye-controlled Focus function on one North American model.**

| Specification item / Market-specific name | | Japan | North America | | Europe, other | |
|---|---|---|---|---|---|---|
| | | 5QD | A2 | A2E | 5QD | 5 |
| Product name logo | | EOS<br>5<br>QUARTZ<br>DATE | EOS<br>A2 | EOS<br>A2E | EOS<br>5<br>QUARTZ<br>DATE | EOS<br>5 |
| Name used in this technical information | | EOS5QD | EOS A2 | EOS A2E | EOS 5QD | EOS 5 |
| Eye Controlled Focus function | | ○ | × | ○ | ○ | ○ |
| Variable dioptric adjustment function | | × | ○ | × | × | × |
| Automatic flash firing | | ○ | × | × | ○ | ○ |
| Metered manual exposure | | ○ | × | × | ○ | ○ |
| Zero-method manual | | × | ○ | ○ | × | × |
| In-focus beep | | ○ | × | × | ○ | ○ |
| External LCD panel indicators | −\|+ | × | ○ | ○ | × | × |
| | ←👁 | ○ | × | ○ | ○ | ○ |
| | OFF | ○ | × | ○ | ○ | ○ |
| | CAL-1 ~ CAL-5 | ○ | × | ○ | ○ | ○ |
| | END-1 ~ END-5 | ○ | × | ○ | ○ | ○ |
| Viewfinder internal display indicators | −\|+ | × | ○ | ○ | × | × |
| | 👁 | ○ | × | ○ | ○ | ○ |
| | OFF | ○ | × | ○ | ○ | ○ |
| | CAL-1 ~ CAL-5 | ○ | × | ○ | ○ | ○ |
| | END-1 ~ END-5 | ○ | × | ○ | ○ | ○ |
| Focusing screen | Depth-of field check mark | ○ | × | ○ | ○ | ○ |
| | Calibration index marks | ○ | × | ○ | ○ | ○ |
| Command dial | CAL position | ○ | × | ○ | ○ | ○ |

**Note: In this table an "o" indicates the inclusion and an "x" the lack of a certain feature.**

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# PART 1. GENERAL INFORMATION

# FEATURES

## 1.Development Objectives

In the seven years since the appearance of the first AF SLR in 1985, the AF proportion of the SLR market has grown at a strong and steady pace. The EOS series has grown and matured till there is now a full line-up of four second-generation EOSs from the top of the line EOS-1 to the very affordable EOS 1000/Rebel. Throughout the seven years, popular-priced AF SLRs have been effective in increasing the AF share, although the SLR market has continued to flounder. To reinject life into the SLR market and to re-establish Canon as the industry leader, it is necessary to strengthen the EOS competitive position in every segment of the market with new technology and improved performance.

Leading the way for the third generation EOS series in the EOS 5 / A2 /A2E, featurning advance performance and specifications. Positioned directly below the EOS-1 in the EOS line-up, it is intended to expand Canon's share of the professional and advanced amateur SLR market by combining the advanced features with the strengths of the EOS-1.

## 2. Development Concept

### AF SLR employing the latest technologies

Eye-controlled focus point selection and other advanced technology appropriate for leading into the third AF SLR generation.

### Silent, high-speed bi-directional film transport

Building on the noise-reduction technology first used in the EOS 100/Elan to provide silent winding and rewinding at professional speeds.

### Designed to expand the professional/advanced amateur AF SLR market share.

# 3. Features

Items marked with **N** are new features appearing for the first time on the EOS 5 series.

## 3.1 Eye-controlled Focus • High-Performance AF

**N** Eye-controlled focusing point switching/wide-zone focusing (not provided on EOS A2).

Any of five focusing points can be freely selected either manually or using the Eye-controlled Focus function. Automatic focusing point selection is also provided.

Wide-zone focusing is provided using a | | + | | type multi-sensor BASIS autofocus system.

### • High-speed AF

Same as EOS 10.

### • Strong in low light

AF low light working limit: EV0

Built-in AF auxiliary light corresponds to 5-point focusing pattern.

### • High-performance AF

Easily focuses low contrast subjects (focusing is possible for contrast ratios as low as 90:80).
Central cross-type BASIS focuses both vertical and horizontal lines.
Automatic switching between One-shot AF and AI Servo AF provided.

## 3.2 Silent Film Transport

Employs belt drive and floating supports like the EOS 100/ELAN. Features a new whisper-quiet silent rewind mode.
Built-in motor drive achieves a fast continuous winding speed of approximately five frames per second.
Continuous winding at approx. 3.0 fps is possible in AI Servo AF mode.

## 3.3 Full-featured Exposure Control Linked with Wide-zone AF

**N** Evaluative metering, spot metering and center-weighted average metering using 16-zone metering sensor (SPC).

Evaluative metering linked with 5 focusing points.

**N** Vertical position detection switch automatically switches the eveluative metering algorithm for vertical shooting.

**N** Spot metering can be linked to focusing points if desired (custom function)

- Multi-point flash exposure control linked to focusing points (same as EOS 10).
- Eight AE shooting modes (P, Tv, Av, DEP, Full Auto, Programmed Image Control, A-TTL and TTL auto flash control) and manual exposure mode selectable.

N X mode provided for shooting with high-output flashes.

- Real-time exposure compensation possible using quick control dial (æ2 stops in 1/2 stop increments).
- Preset multiple exposure and auto exposure bracketing functions provided.
- Super-high-speed shutter: 1/8000 sec., X = 1/200 sec.

N Flash exposure compensation using EZ Series speedlites controllable from the camera.

- PC terminal with locking thread provided .

## 3.4 Built-in Multi-function Auto Flash

- Built-in retractable TTL auto zoom flash.

Guide number range of 13 ~ 17 (ISO 100 • m, 28mm ~ 80mm)

Auto pop up and automatic firing for low light and backlit scenes in Full Auto mode and some Programmed Image Control modes. (Automatic firing not provided on EOS A2/A2E.)

Flash firing can be turned on or off in creative zone modes.

Quick charge design recycles the flash in approx. 2 seconds.

Second-curtain sync (custom function)

Flash exposure compensation function (±2 stops in 1/2 stop steps)

Built-in red-eye reduction function

## 3.5 Superior Operability

- Superior handling

Taller configuration provides ample finger-wrapping room for secure holding.
Vertical holding grip available for comfortable operation and shooting in both horizontal and vertical positions.

- Quick double dial operation
- 3-pin remote control socket provided
- Necessary shooting information centralized on large LCD panel
- Sixteen custom function settings allow the camera to be configured to each user's individual preferences.

# SPECIFICATIONS

[1] indicates the alternate, user selectable, function and [0] indicates the normal setting of any custom function ("1" or "0" is displayed on the top deck LCD panel). (All functions are set to [0] at the factory.)
An **[A2]** indicates information applicable to the base USA model, without Eye-controlled Focus only. An **[A2/A2E]** indicates information applicable to both USA models.

## 1. Type Classification

| | | |
|---|---|---|
| 1-1 | Type | 35mm single-lens reflex electronically controlled focal plane (upward vertical travel) shuttered automatic exposure and focusing camera with built-in motor drive, and flash. |
| 1-2 | Format | 24mm x 36mm |
| 1-3 | Compatible lenses | Canon EF lenses (full aperture metering) |
| 1-4 | Standard Lens | |

## 2. Autofocus

| | | |
|---|---|---|
| 2-1 | Type | Wide five area sensor with two vertical sensors on each side of the center f/5.6 crossed BASIS sensor* TTL-SIR system.<br>• [This configuration is indicated by this symbol: [(\| \| + \| \|)]. |
| 2-2 | Focusing modes | The following four modes can be selected:<br>(1) One-shot AF mode: Focus locks once in-focus; shutter cannot be released until unless focus is correct.<br>(2) Predictive AI Servo AF mode: The lens continually focus to stay on the subject.<br>(3) AI Focus mode: This 'mode' is actually a combination of both (1) and (2) and automatic focus sensor selection used only in the Full Auto (green□) mode. (Once the camera automatically switches from One-shot to AF Servo AF, it will not switch back until the shutter button is releases once.)<br>(4) Manual focusing |
| 2-3 | Focus Point Selection | (1) Eye-controlled Focus (except [A2])<br>The autofocus point is determined by where the user is looking. There are five focusing points.<br>In AI Servo AF mode, the focusing point moves according to eye movement and stop time (count).<br>• Individual eyesight calibration: Set command dial to CAL ⇒ set to a CAL number (1 - 5) that is flashing ⇒ look at rightmost frame ⇒ frames lights ⇒ press SW1 on (Be-Be) ⇒ look at the leftmost frame ⇒ the frame lights ⇒ press SW1 on(Be-Be) ⇒ END -x lights and calibration is completed.A continuous beeping instead of a short double beep indicates calibration failure, try again. (The camera can be calibrated for up to five different users.) |

| | | |
|---|---|---|
| | | (2) Manual dial control<br>Any one of the five points can be selected manually, or the camera can be set to select the most appropriate point automatically. Press the AF focus point selection button and turn the main dial till the desired point, or all five points, lights. |
| 2-4 | AF/Shutter Priority (In AI Servo AF only) | (1) Creative Zone: The shutter will release regardless of focus.<br>(2) Image Zones: The shutter will not release until the lens is focused. |
| 2-5 | AF operation speed | Same as EOS-10, using center BASIS (EOS-10 specifications: Approx. 0.5 seconds (from ∞ to closest shooting distance) with EF 35-135mm *f*/4-5.6 lens.) |
| 2- | AF in-focus indication | Indicated on the LCD inside the viewfinder by the flashing red focus mark, and by a beeper. The beeper can be canceled separately. (There is no beeper tone in the [A2/A2e] model.)<br>**CF-10 [1] :** As above, but focus mark does not flash. |
| 2-7 | AF Precision | Same as EOS-10 |
| 2-8 | AF working range | EV 0 - 18 (ISO 100), measured using Canon standard test conditions. |
| 2-9 | AF auxiliary light | (1) Built-in AF auxiliary light<br>**CF-7 [0]:** The AF auxiliary light fires automatically and covers all five focusing points. Effective for focal lengths ranging from 28mm to 135mm. Effective up to seven meters in the central area, and to 3.5 meters for the peripheral areas.The built-in AF auxiliary light operates even when a separate EOS flash unit is used; the AF auxiliary light on the flash unit does not fire.<br>**CF-7 [1]:** The AF auxiliary light function is deactivated. (The AF auxiliary light on an external flash will not fire either.) |

## 3. Viewfinder

| | | |
|---|---|---|
| 3-1 | Type | Eye-level pentaprism single lens reflex (without condenser lens) |
| 3-2 | Focusing screen | Interchangeable full surface laser-matte screens, changed through the lens mount.<br>(1) Standard Ed-Ne screen with focus point area marks; and depth-of-field check mark. **except [A2].**<br>(2) Standard Ed-N screen with focus point area marks; but no depth-of-field mark especially for EOS A2.<br>(3) Ed-O Screen with marks indicating the actual shapes of the focus sensors ( \| \| + \| \| ).<br>(4) Ed-D Grid screen without focus marks<br>(5) Ed-H Crossed-scale screen without focus marks<br>(6) Ed-C Plain matte screen without focus marks<br>(7) Ed-P Screen like standard screen, with Panorama format indication, but no depth-of-field mark. (JPN market only). |

3-3 Power

-1 dpt (eye point: 20mm)

**[A2]** Built-in Eyesight Correction ( ± 1.75 dpt ) giv- ing range from -2.75 to +0.75dpt

3-4 Field of view

92% vertical, 94% horizontal

3-5 Magnification

0.73X (with 50mm lens at infinity)

3-6 Information

Within image area (with standard focusing screen)

(1) Five etched AF Focusing Marks indicate positions of focus sensors

(2) **CF-10 [0]:** Illumination of active focusing frame(s).

**CF-10 [1]:** The display illumination is canceled.

(3) Depth-of-field Check Mark (not [A2])

Below viewing area: Alphanumeric display via seven-segment LCD (yellow-green).

(a) Shutter speed (Out-of-coupling-range warning: Blinks at 2Hz)
(b) Aperture (Out-of-coupling-range warning: Blinks at 2Hz)
(c) Also serves as Depth-of-Field AE mode (dEP 1, dEP 2) in all models, and Calibration display (CAL-1 ~ CAL-5 and End-1 ~ End-5) in models except [A2].

Below viewing area: Masked LED Symbol display (yellow-green) (from left)

▷ : Eye-controlled focus mode indicator ( [A2] NOT)
ϟ : Flash charge completion indicator (Blinks at 2Hz during back-lit and low-light situations when the flash is turned off)
✱: AE lock
(Alphanumeric Display)
ϟ+/− : Flash Exposure Compensation in-use indicator
◖◗: Manual Exposure Indicator ([A2/A2e] only)

−2 1 1 ▾ 1 1 2+ : Exposure display ( ± 2 stops in 1/2 spot increments) used for:
(a) Exposure compensation (in AE modes)
(b) Flash exposure compensation
(c) Manual exposure ([A2] NOT)
(d) AEB step setting

● : AF in-focus indicator (Blinks at 2Hz when AF is not possible)

It is not possible to extinguish the bottom viewfinder display.

3-7 Mirror

Quick-return full-surface half mirror (60% reflection)

3-8 Mirror up function

**CF-12 [0]:** None

**CF-12 [1]:** In Self-timer mode, the mirror moves up at SW-2 ON and exposure occurs two seconds later.

3-9 Mirror Image cut-off

None with EF 300mm *f*/2.8L + 2X Extender

| | | |
|---|---|---|
| 3-10 | Depth-of-field check | **CF-11 [0]:** In eye-controlled focus mode, activated by looking at D-O-F check mark ([A2] N/A)<br>**CF-11 [1]:** In any mode, activated by AE Lock Button, also activated by looking at D-O-F check mark in ECF mode. ([A2] N/A) |
| 3-11 | Eyepiece shutter | None (the strap has a built-in eyepiece cover) |
| 3-12 | Other | Optional angle finder and dioptric adjustment lenses E, but not the magnifier, can be attached to the eyepiece, with an adaptor. A removable eyecup is standard, and a LARGE eyecup is optionally available. |

## 4. Exposure control

| | | |
|---|---|---|
| 4-1 | Metering system | TTL maximum aperture metering using a 16-section SPD. The following three metering modes can be selected:<br>(1) Evaluative metering (Coupled with the five AF focusing points). A vertical position detector switch adjust the metering alogrithm when the camera is used in the vertical position.<br>(2) Spot Metering (each spot, which corresponds to each focusing area, has a 5.5 x 6.5mm area, or about 3.5% of the image area)<br>**CF-15 [0]:** Center-spot metering, regardless of focus area in use<br>**CF-15 [1]:** Metering spot is the same area as the focus area, in manual focus area selection mode only.<br>(3) Center-weighted averaging metering |
| 4-2 | AE modes | Eight AE modes, "X" sync mode, or manual metering can be selected:<br>(1) Intelligent Program AE (shiftable)<br>(2) Shutter-priority AE (without safety shift function)<br>(3) Aperture-priority AE (without safety shift function)<br>(4) Depth-of-Field AE (shiftable)<br>(5) Full Auto mode Intelligent Program AE (shiftable)<br>(6) Programmed Image Control mode [(a) Portrait (b) Landscape (c) Close-up (d) Sports]<br>(7) A-TTL flash program AE<br>(8) TTL flash program AE<br>(9) X sync mode (using PC contact)<br>(10) Manual (metered manual) |
| 4-3 | Metering range | EV 0 to 20 (at normal temperature; with hypothetical 50mm *f*1.4 lens at ISO 100) |
| 4-4 | Out of metering coupling range warning | LCD digital indicator blinks at 2Hz in the external and viewfinder displays. |

4-5 Exposure preview

Displayed when shutter button is pressed halfway.

**CF-13 [0]:** A six-second metering timer is activated when the shutter button is released from the halfway position.

**CF-13 [1]:** Metering goes off as soon as shutter button is released.

4-6 Film speed

ISO 6-6400, set in 1/3-stop increments as described below.

**CF-3 [0]:** Film speed set automatically via the DX code on the film cartridge. (ISO 25 - 5000 in 1/3 stop increments)

**CF-3 [1]:** Manual setting (ISO 6 to 6400 in 1/3 stop increments).

•: Only DX film speed code is read.

4-7 Exposure compensation

(1) AEB: Auto exposure bracketing
  (a) Operation Possible in all of the modes listed in the table below.
  (b) Bracketing range: ± 2 stops in 1/2-stop increments
  (c) Exposure sequence: Three continuous exposures: correct exposure, underexposure, and overexposure. Exposure is linked to film transport mode setting.
  (d) The compensated value (shutter speed or aperture) is related to the exposure mode, as shown below:
  (e) Cancellation: Can only be canceled manually (automatic cancellation not provided).

| Mode | Shutter Speed | Aperture |
|---|---|---|
| Intelligent Program AE | • | • |
| Shutter-priority AE | — | • |
| Aperture-priority AE | • | — |
| Depth-of-field Mode | • | — |
| "X" mode w/PC flash | — | • |
| Manual | • | — |

(2) Manual setting: ± 2 stops in 1/2 stop increments
  • The AEB function (1) and the manual compensation function (2) can be combined.

(3) When the built-in flash or EOS system flash, other than the 430EZ, ± 2 stops flash exposure compensation in 1/2 stop increments is possible using the quick-control dial.

(4) When the 430EZ is used, the A-TTL automatic flash fill-in ratio can be controlled on the flash in 1/3-stop increments within a ± three stop range.

4-8 AE lock

Activated by AE lock button

4-9 Multiple exposure operation

Number of exposures is preset before shooting. Up to nine exposures can be preset at one time (can be canceled or reset during operation).

**CF-8 [0]:** Multiple exposure mode is canceled automatically after the specified number of exposures has been shot.

**CF-8 [1]:** Multiple exposure mode is not canceled.

## 5. Shutter

| | | |
|---|---|---|
| 5-1 | Type | Vertical-travel (upward) electronically controlled focal plane shutter. Curtain operation controlled by individual repulsion electromagnets (Curtain travel time: approx. 3.8ms/24mm) |
| 5-2 | Shutter speed | 30 to 1/8000s in half stop increments, indicated on top deck LCD panel. X-sync speed is 1/200s. Shutter speed can be set in half stop increments in either shutter-priority AE mode or manual mode. There is no elapsed time display in bulb mode. |
| 5-3 | Shutter release system | Soft-touch electromagnetic release system (3-pin remote release socket provided)<br>**CF-5 [0]:** In single frame operation, AE exposure carried over to next exposure unless pressure is completely removed from shutter button.<br>**CF-5 [1]:** In single frame operation, exposure is not possible unless pressure is completely removed from shutter button. |
| 5-4 | Release time lag | Release time lag excluding AF operation time:<br>(1) Following a pause after SW-1 is switched ON, from SW-2 ON to beginning of exposure ....... 105ms<br>(2) From simultaneous pressing of SW-1 and SW-2 ON to beginning of exposure .................. 145ms |
| 5-5 | Self-timer | Electronically controlled 10 second timer (can be canceled after activation by setting the main dial to "L"): Self-timer operation is indicated by an electronic beeper and the AF auxiliary light (which flashes at 2Hz for the first eight seconds, then at 8Hz for the remaining two seconds). |
| 5-6 | Camera shake warning | The beeper sounds at 2Hz when the shutter speed (Tv auto) falls below 1/focal length ( + 0 - 1/2 stop) in Full Auto or a Programmed Image Control Mode. |
| 5-7 | Shutter operational noise | Less than 75dB |

## 6. Film transport

| | | |
|---|---|---|
| 6-1 | Film loading and advancing | Film is automatically loaded using electronic film metering doing away completely with the conventional sprocket. Film advance begins after the film is installed and the back cover is closed. The film is advanced until the frame counter reads "1", at which point film advance stops. This operation requires approximately one second. (This operation is separated from shutter and mirror charge operations.) |
| 6-2 | Film winding system | Film is advanced automatically by a dedicated, miniature coreless motor. Film advance is controlled using an infrared reflective photocoupler to detect the film perforation movement. |
| 6-3 | Film winding modes | (1) Single-frame mode [S]<br>(2) Continuous mode [C]<br>(3) High-speed Continuous mode [CHi] |

6-4 Start of film winding

Film winding begins when the exposure completion signal is received.

6-5 Winding speed

| Focusing mode | Continuous speed | |
|---|---|---|
| | CHi | C |
| One-shot AF | Approx. 5f/s (Aperture stopped down) | Approx. 3f/s |
| AI Servo AF | Approx. 3f/s with aperture opening between shots | Approx. 3f/s |
| Manual | Approx. 5f/s (Aperture stopped down) | Approx. 3f/s |

6-6 Film transport confirmation

By frame counter

6-7 Shooting capacity

The number of 24-exp. rolls which can be shot using a new 2CR5 battery and an EF 50mm *f*1.8 lens under various conditions is shown in the table below.

| Temperature | No flash use | 50% flash use | 100% flash use |
|---|---|---|---|
| Normal (20C) | 40 (50) | 20 (23) | 12 (15) |
| Low (-20C) | 15 (18) | 9 (11) | |

- Numbers in paranthese apply if eye-controlled focus is not used.

6-8 Film rewind system

Automatic rewind using a miniature coreless motor.

6-9 Start of film rewinding

(1) Automatic rewind
Rewind starts when the end of the film is detected by tension, or after the 36th frame has been exposed.

(2) Mid-roll rewind
Rewind can be started at any time by pressing the Film Rewind button.

6-10 Film rewind confirmation

Rewind is confirmed by the frame counter counting down.

6-11 Rewind time (24 exp. film)

**CF-1 [0]:** Silent rewind mode: 12 seconds

**CF-1 [1]:** High speed rewind mode: 6 seconds or less

6-12 Rewind completion

**CF-2 [0]:** Rewind automatically stops after film leader is fully wound into the cartridge.

**CF-2 [1]:** Rewind automatically stops leaving the film leader outside the cartridge.

6-13 Rewind completion indicator

Cartridge symbol on LCD panel blinks at 2Hz.

6-14 Film-loaded confirmation

(1) Indicated at all times by cartridge symbol on LCD panel.

(2) Visual check using film check window.

| | | |
|---|---|---|
| 6-15 | Frame counter | Additive frame counter displayed on LCD panel (counts down during rewind) |
| 6-16 | Film Transport Noise | In continuous (C) mode from a position 15cm behind the camera:<br>**CF-1 [0]:** Less than 57dB during winding and 48dB during rewinding.<br>**CF-1 [1]:** Less than 57dB during winding and rewinding. |

## 7. Built-in Flash

| | | |
|---|---|---|
| 7-1 | Type | Retractable TTL automatic zoom flash housed above the pentaprism. |
| 7-2 | Guide number | 13 (28mm) ~ 17 (80mm) (ISO 100, meters) |
| 7-3 | Flash recycling time | Approximately two seconds |
| 7-4 | Flash coverage angle | Equivalent to angle of a 28, 50 or 80mm lens depending on the zoom setting. |
| 7-5 | Flash Switch | Yes, for forced firing. Retraction is manual. |
| 7-6 | Flash firing conditions | (1) In the creative zone modes, forced firing is possible by popping up the flash.<br>(2) In Full Auto mode or certain Programmed Image Control modes (Portrait, Close-up) the flash automatically fires in back-lit and low-light situations. ([A2/A2e] NOT) |
| 7-7 | Aperture during flash shooting | (1) Program mode: Flash aperture value is automatically set according to TTL program. (2) Aperture-priority AE or manual mode: Aperture value freely set by user. (3) Shutter-priority AE mode: Aperture value is automatically set according to selected shutter speed and ambient light level. |
| 7-8 | Synchronized shutter speeds | (1) Program mode: Automatically set to 1/60- 1/200s<br>(2) Aperture-priority AE mode:<br>**CF-9 [0]:** Automatically set to 30-1/200s according to selected aperture and ambient light level.<br>**CF-9 [1]:** Set to 1/200s regardless of ambient light level.<br>(3) Shutter-priority AE or manual mode: Freely set (in 1/2-stop increments) by user to 1/200s or slower.<br>(4) X mode: Shutter speeds of 1/200, 1/125, 1/90, and 1/60 can be selected. |
| 7-9 | Flash control system | TTL evaluative flash metering of light reflected off the film surface (coupled to AF focusing points) |
| 7-10 | Flash exposure level modification | **CF-16 [0]:** Automatic reduction of output during bright daylight fill-in flash.<br>**CF-16 [1]:** Normal exposure in all situations |

| | | |
|---|---|---|
| 7-11 | Flash Exposure Compensation | ± 2 stops in 1/2 stop increments for built-in flash and EOS system flashes, except the 430EZ. |
| 7-12 | Flash coupling range (color slide film) | 1 to 3.6m (Wide) 5.4m (Tele) (Using ISO 100 film and lens with f/2.8 or larger maximum aperture) |
| 7-13 | Out-of-coupling-range warning | None. |
| 7-14 | Flash control display | None |
| 7-15 | Flash charge completion indication | Flash charge completion confirmed when “ ⚡ ” symbol lights in viewfinder. (Shutter release is locked while flash is charging.) |
| 7-16 | Flash Synchronization Built-in flash | **CF-14 [0]:** First curtain X sync<br>**CF-14 [1]:** Second curtain X sync |
| 7-17 | Flash duration | 1.0ms or less |
| 7-18 | Flash color temperature | Equivalent to daylight |
| 7-19 | Flash vertical offset | 73mm (lens optical axis to center of flash tube) |
| 7-20 | Power source | Camera battery |
| 7-21 | Red-eye Reduction | The red-eye reduction lamp in the flash head illuminates the subject for a specified period before the flash fires. |
| 7-22 | Other | The built-in flash cannot be used together with an external flash. When an external flash is attached, the built-in flash will not pop up regardless of the charge condition of the external flash. |

## 8. Camera body

8-1 Custom functions

16 user-selectable custom functions are built-in. Custom functions are set by turning the Command dial to "CF", turning the main dial to select the function number, the pressing the AE lock button to set (or cancel) that custom function. A zero (0) indicates that the normal (default) function is set. A one (1) indicates that the alternate, or custom, function is set.

The 16 functions are:

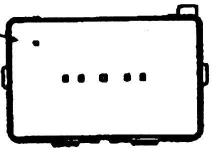
| CF# | Normal (0) Function | Custom (1) Function |
|---|---|---|
| CF-1 | Normal (Silent) rewind (12 sec,) | High-speed rewind (6 sec.) |
| CF-2 | Film leader wound into cartridge | Film leader protruding after rewind |
| CF-3 | DX-coded film speed set automatically | ISO film speed set manually |
| CF-4 | Pushing shutter button (SW1) starts AF | Pushing AE lock button starts AF (CF-4 cannot be used in conjuction with CF-6 or CF-11) |
| CF-5 | In single-frame mode, not releasing SW1 retains previous AE setting for next release. | In single-frame mode, the shutter button (SW1) must be off before next exposure sequence can start. |
| CF-6 | – – – | Interrupt AF operation with AE lock button. (Does not work if CF-4 is set to "1") |
| CF-7 | AF auxiliary light on when needed | AF auxiliary light does not light |
| CF-8 | Multiple exposure mode is not cled after each exposure series. | Multiple exposure mode is canceled after each exposure series. |
| CF-9 | When using flash with Aperturiority AE, shutter speed is determined by ambient light. | Shutter speed is fixed at 1/200 second. |
| CF-10 | Focus indicators in viewfinder light to indicate active focus sensor(s). | Focus indicators do not light. |
| CF-11 | – – - | Depth-of-field check function added to AE Lock button. (inoperative if CF-4 is set to "1") |
| CF-12 | Ten second self timer with mirror going up after delay. | Two second self timer with mirror going up before delay. |
| CF-13 | Removing pressure from shutter button initiates six-second meter timer. | Metering is turned off when pressure is removed from shutter button. |
| CF-14 | Built-in flash: First curtain synchronization | Built-in flash: Second curtain synchronization |
| CF-15 | Center spot used in spot metering mode. | Metering spot corresponding to focus area used in spot metering mode. |
| CF-16 | Flash output is reduced in daylight fill-flash. | Flash output is not reduced in daylight fill-flash. |

|  |  |  |
|---|---|---|
| 8-2 | Back cover | Opened via the back cover opening lever. Cannot be removed. Provided with film check window (but not provided with memo holder). |
| 8-3 | Flash contacts | X-sync contact; Accessory shoe equipped with directly coupled contacts and provided with lock-pin receiving hole to prevent accidental removal of flash unit. |
| 8-4 | Automatic flash | Same as the EOS 100/ELAN |
| 8-5 | Remote Control | Three pin remote socket provided |
| 8-6 | Quarts Date | Same as EOS 100/ELAN |
| 8-7 | Power source | One 2CR5 6V lithium battery pack. |
| 8-8 | Main switch | Camera is OFF when the command dial is set to "L" (Lock). The safety lock in the center of the dial must be pressed to turn the dial off of the L position. |
| 8-9 | Battery check | Battery condition is checked automatically when the camera is turned on and indicated continuously by a 4-stop display on the LCD panel. |
| 8-10 | External display | Large LCD panel (no illumination function provided) |
| 8-11 | Tripod socket | CU-1/4" 20 pitch |
| 8-12 | Grip replacement | N/A. An optional vertical holding grip with hand strap can be attached. |
| 8-13 | Body material | Glass-fiber reinforced polycarbonate resin. |
| 8-14 | Body color | Matte black finish. |
| 8-15 | Dimensions | 154 (W) x 121 (H) x 75 (D)mm (Body thickness: 53mm) |
| 8-16 | Weight | 665 grams *(QD: 675 grams)* (battery adds 40g) |

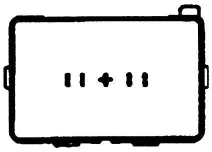
## 9. New Related Products

1. Interchangeable Focusing Screens (6 types)
    1) Standard Matte Screen with Focus Areas and D-o-F Mark. (Ed-Ne)

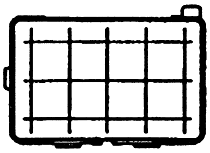
       Screen for A2 does not have D-o-F Mark. (Ed-N)



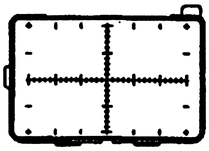
    2) Screen with Focus Sensor Marks. (Ed-O)



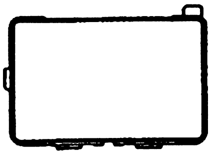
    3) Matte Screen with Grid (Ed-D)



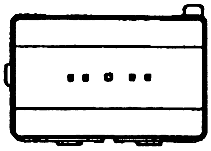
    4) Matte Screen with Scale (Ed-H)



    5) All Matte Screen (Ed-C)



    6) Panorama Format Matte Screen with Focus Areas (JPN only) (Ed-P)



2. Vertical Holding Grip
3. Semi-hard Case
4. Wide Strap
5. Adaptor for Angle Finder B
6. Adaptor for Eyesight Correction Lenses E
7. Kit Lens: EF 28-105mm f/3.5-4.5 USM.

## 10. Existing Related Products

See the EOS System Accessory charts – –

# VISUAL INDICATORS & WARNINGS

## LCD PANEL

● : Steadily lit display    ■ : Blinking display    ❑ : Both steadily lit and blinking displays

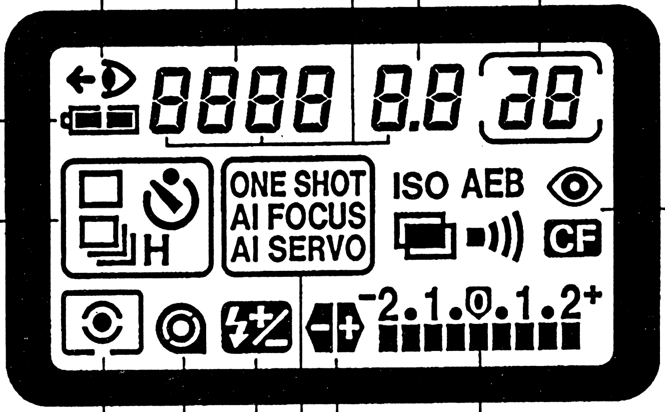
- ❑ Shutter speed setting/calculated value (8000 ~ 30", BULB)
- ❑ ISO film speed numerical display (6 ~ 6400)
- ● DEP (Depth-of-Field AE operation indicator)
- ● Custom function number (C01 ~ C16)
- ❑ Calibration indicator (OFF CAL END) (not provided on EOS A2)

● Focusing point indicators

- ❑ Aperture value setting/calculated value (1.0 ~ 91)
- ● AEB step indicator (0.0 ~ 2.0)
- ● DEP count indicator
- ● Custom function setting indicator (0 or 1)
- ● Red-eye reduction setting indicator (0 or 1)
- ● Beeper tone setting indicator
- ❑ Calibration No. indicator (–1 ~ –5) (not provided on U.S.A. model)

- ❑ Frame counter numerical display (0 ~ 36)
- ● Number of preset multiple exposures (1 ~ 9)
- ● Multiple exposure countdown display (9 ~ 1)

❑ Eye Controlled Focus Mode Indicator (not provided on EOS A2)



❑ Battery check indicator (4-step display)

- ISO ❑ ISO film speed indicator
  Blinks when non-DX film is loaded.
- AEB ❑ AEB function indicator
- ◉ ● Red eye reduction mode indicator
- ❑ Multiple exposure function indicator
- ● Beeper tone ON/OFF indicator
- CF ● Custom function indicator

**Film transport indicators**
- ● Single-frame shooting ☐
- ● Continuous shooting
- ● High-speed continuous shooting H
- ● Self-timer function indicator

**Metering mode indicators**
- ● Evaluative metering
- ● Spot metering
- ● Center-weighted average metering

**Film condition indicator**
- ● Film loaded indicator
- ■ Film rewind completion indicator / Loading failure warning indicator

● Flash exposure compensation indicator

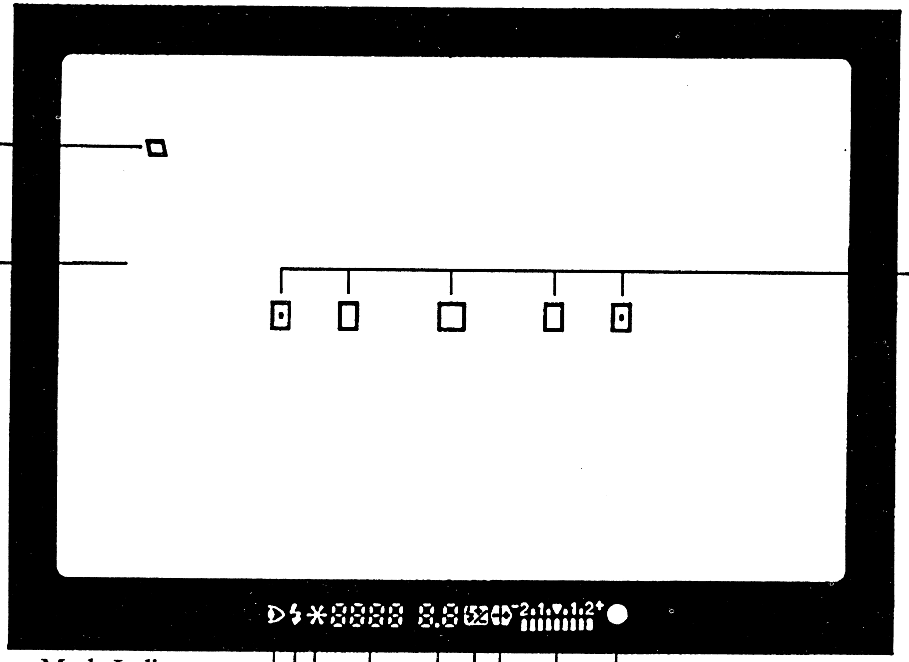
Zero-method maual metering display (EOS A2/A2e only)

**Exposure display**
- ● Exposure compensation display
- ● Metered manual exposure display (except EOS A2/A2e)
- ● AEB shift amount display
- ● Flash exposure compensation amount display
- ● 1.5-second shutter release lock indicator while the red eye reduction lamp is lit

**Focus mode indicators**
- ● One-shot AF
- ● AI Focus (automatic focusing point selection and One-shot AF/AI Servo AF automatic switching)
- ● AI Servo AF
- ● Manual focus (all indicators extinguished)

# VIEWFINDER DISPLAY

**Figure 18 Viewfinder Field of View and Information Display**



● Depth-of-field Check Mark (not provided on EOS A2)

New laser-matte screen

☐ Superimposed indicator positions
* AF focusing point position (Lights when focusing point is selected. During single-spot focusing, the indicator blinks once at SW-1 ON, then blinks again when focus is obtained.)
* Spot metering position
* Calibration position (far left and far right points) (not provided on EOS A2)

☐ AF in-focus indicator
* Lights when subject is focused using one-shot AF. Blinks at 2 Hz if focusing is impossible.
* Lights when subject is focused using manual focusing (focus aid indicator). Extinguished when subject is not in focus (no focus aid indicator).

☐ Eye Controlled Focus Mode Indicator (not provided on EOS A2)

☐ Flash charging indicator
* Lights when charging is completed.

● AE lock indicator

☐ Shutter speed digital display (8000 ~ 30", BULB)

**DEP 1, 2 display**
● Calibration display (CAL -1 ~ -5 END -1 ~ -5) (except EOS A2)

**Exposure display**
● Exposure compensation display
● Metered manual exposure display (except EOS A2)
● AEB shift amount display
● Flash exposure compensation display
● 1.5-second shutter release lock display while red-eye reduction lamp is lit

● Zero-method manual exposure indicator (EOS A2/A2e only)

● Flash exposure compensation indicator

☐ Aperture value digital display (1.0 ~ 91)

# VIEWFINDER AND LCD WARNINGS

## Viewfinder Warnings

┆ ┆ indicates the enclosed value blinking at 2Hz.

AVO is the maximum aperture of the lens in use. AVmin is the minimum aperture.
TV set and AV set are the manually selected shutter speed or aperture.
TV auto and AV auto are the shutter speed and aperture determined by the exposure computer.
Unless otherwise noted the lens for all examples is EF 50mm f/1.8, and the film speed is ISO 100.

| Type of Warning | Shooting Mode | Viewfinder Warning | Note * |
|---|---|---|---|
| Underexposure | Program AE & PIC Landscape and Sports | TV auto 30" <br> AV auto AVO | ⊞ 1 |
| | Shutter Priority (TV AE) | TV set <br> AV auto AVO | ⊞ 2 |
| | Aperture Priority (AV | TV auto 30" <br> AV set | ⊞ 3 |
| | Manual | A2/A2E: ◀ <br> Other Models: −2.1.▼.1.2+ ▲ | ⊞ 4 |
| Overrexposure | Program AE & PIC Landscape and Sports | TV auto 8000 <br> AV auto AV min | ⊞ 5 |
| | Shutter Priority (TV AE) | TV set <br> AV auto AV min | ⊞ 6 |
| | Aperture Priority (AV | TV auto 8000 <br> AV set | ⊞ 7 |
| | Manual | A2/A2E: ▶ <br> Other Models: −2.1.▼.1.2+ ▲ | ⊞ 8 |
| Autoloading NG | Not mode-specific | ◎ blinking (2Hz) | ⊞ 9 |
| Battery too low | Not mode-specific | ▭ blinking (2Hz) | ⊞ 10 |
| System NG | Not mode-specific | ▭ blinking (2Hz) | |

*: See following page for explanations of notes.

# Viewfinder Warnings using Built-in Flash (A-TTL/TTL)

■ **Viewfinder Exposure Warning Indicators in A-TTL Automatic Flash Control Mode (using 50mm f/1.8 lens)**

* Values framed in dashed lines blink at 2 Hz.

| Subject brightness | Low light (ISO 100, EV 5)<br>General flash shooting | Medium brightness (ISO 100, EV 12)<br>Fill-in flash | High brightness (ISO 100, EV 18)<br>Fill-in flash |
|---|---|---|---|
| Shooting mode | Underexposure warning according to peripheral light metering | Correct exposure according to peripheral light metering | Overexposure warning according to peripheral light metering |
| | TTL flash control - correct exposure | TTL flash control - correct exposure | TTL flash control - correct exposure |
| TV AE | * Note 1<br>TV set 125<br>AV auto 1.8<br>⊞-2 | TV set 125<br>AV auto 5.6 | TV set 125<br>AV auto 22<br>⊞-6 |
| AV AE | * Note 2<br>TV auto 1"<br>AV set 5.6 | TV auto 125<br>AV set 5.6 | TV auto 200<br>AV set 5.6<br>⊞-7 |
| Program AE | TV auto 60<br>AV auto 1.8~22 | TV auto 125<br>AV auto 5.6 | TV auto 200<br>AV auto 22<br>⊞-5 |

■ **Viewfinder Exposure Warning Indicators in TTL Automatic Flash Control Mode (using 50mm f/1.8 lens)**

| Subject brightness | Low light (ISO 100, EV 5)<br>General flash shooting | Medium brightness (ISO 100, EV 12)<br>Fill-in flash | High brightness (ISO 100, EV 18)<br>Fill-in flash |
|---|---|---|---|
| Shooting mode | Underexposure warning according to peripheral light metering | Correct exposure according to peripheral light metering | Overexposure warning according to peripheral light metering |
| TV AE | TV set 125<br>AV auto 1.8<br>⊞-2 | TV set 125<br>AV auto 5.6 | TV set 125<br>AV auto 22<br>⊞-6 |
| AV AE | * Note 2<br>TV auto 1"<br>AV set 5.6 | TV auto 125<br>AV set 5.6 | TV auto 200<br>AV set 5.6<br>⊞-7 |
| Program AE | TV auto 60<br>AV auto 1.8~22 | TV auto 125<br>AV auto 5.6 | TV auto 200<br>AV auto 22<br>⊞-5 |

**Note 1:** This display is for automatic slow sync at EV5. If the light level falls to a very low level, 30" will be displayed and blinking.

**Note 2:** These are general indoor shooting conditions. There is no warning.

**N.B.:** Flash cannot be used with Depth-of-Field AE. If the flash is used with D-o-F mode set, the camera automatically switches to programmed flash mode.

⊞ 1 Use flash, artificial illumination, or faster film.

⊞ 2 Lower the shutter speed until the aperture quits blinking.

⊞ 3 Open the aperture until the shutter speed quits blinking.

⊞ 4 Open the aperture or lower the shutter speed until a stable exposure combination is displayed.

⊞ 5 Use an ND filter or slower film.

⊞ 6 Raise the shutter speed until the aperture quits blinking.

⊞ 7 Close the aperture until the shutter speed quits blinking.

⊞ 8 Close the aperture or raise the shutter speed until a stable exposure combination is displayed.

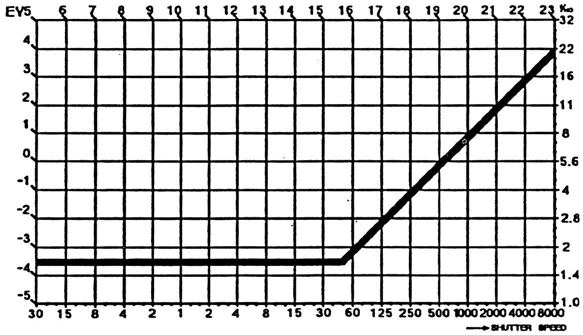
⊞ 9 Reset the film.

⊞ 10 Replace the battery.

# PROGRAM DIAGRAMS

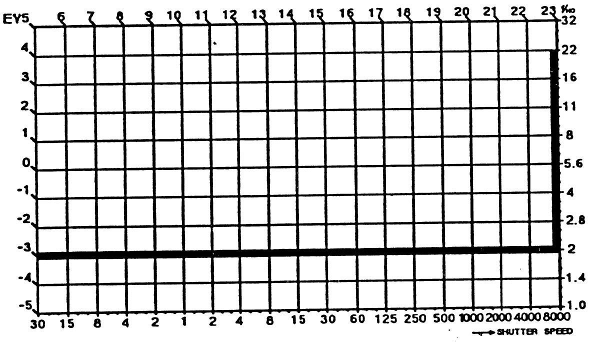
## 1. With EOS 50mm f/1.8 Lens

① Program AE

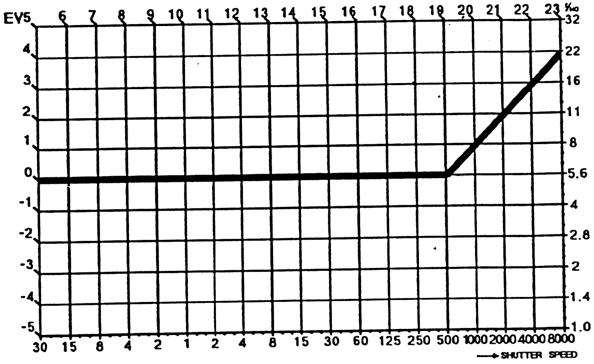


Programmed Image Control modes

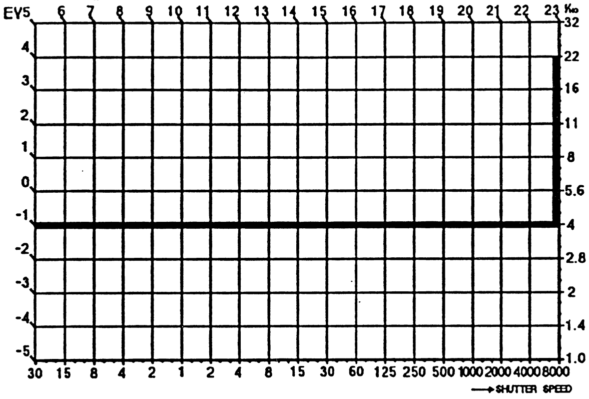
② Portrait



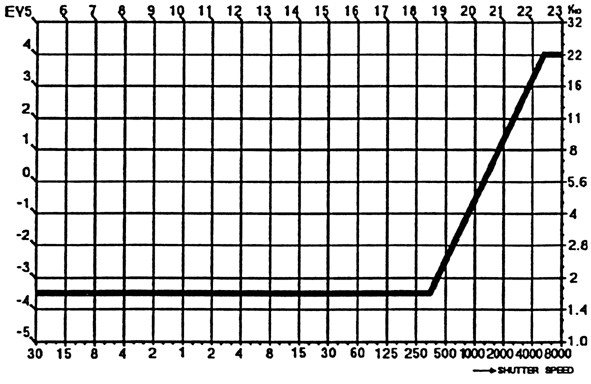
③ Landscape



④ Close-up



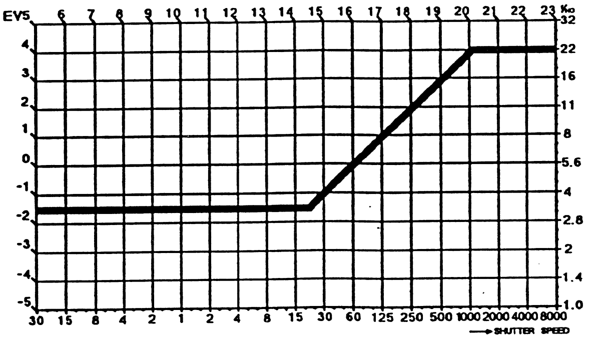
⑤ Sports



# 2. With EOS 28-105mm f/3.5-4.5 Lens

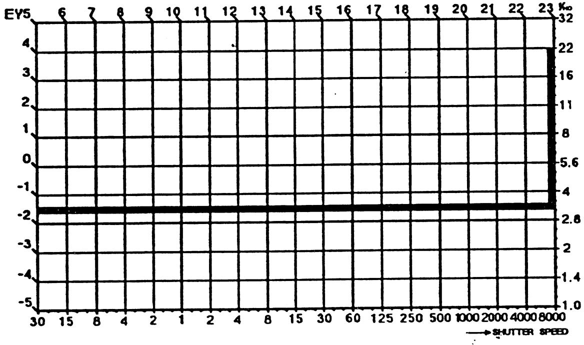
## 2-1 At 28mm f/3.5 Position

① Program AE

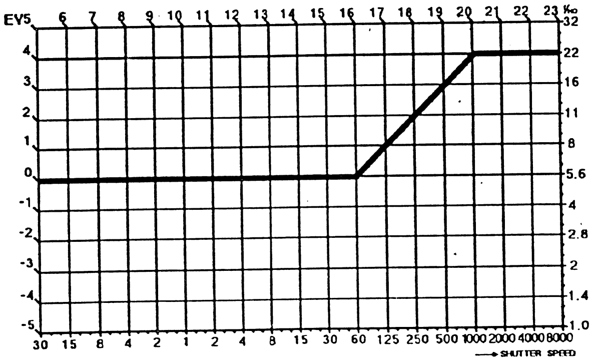


### Programmed Image Control modes

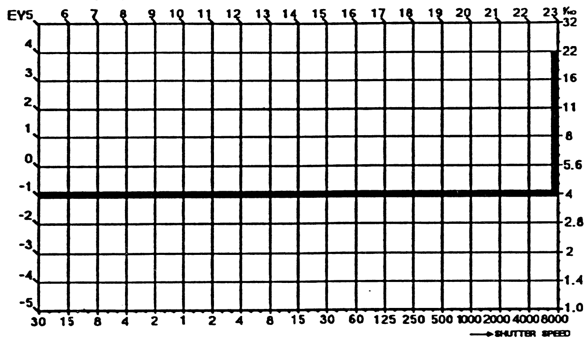
② Portrait (program for lens providing distance data)



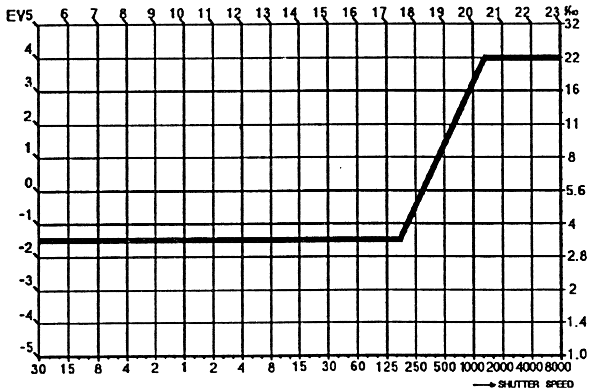
③ Landscape



④ Close-up (program for lens providing distance data)

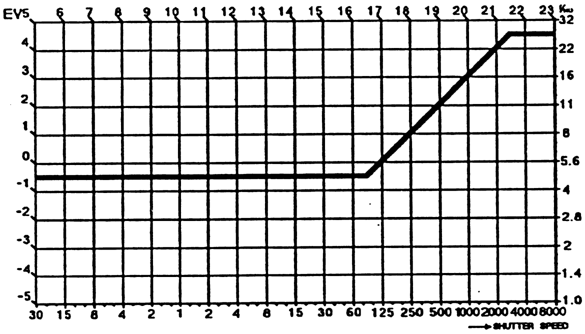


⑤ Sports



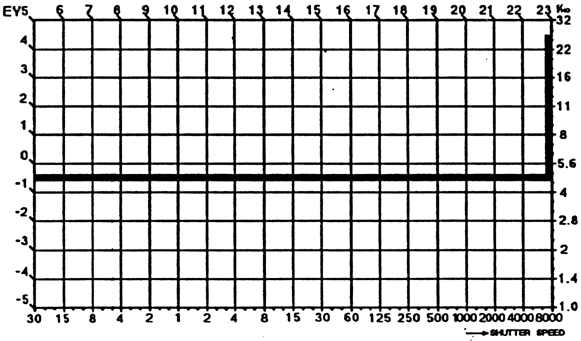
## 2-2 At 105mm f/4.5 Position

① Program AE

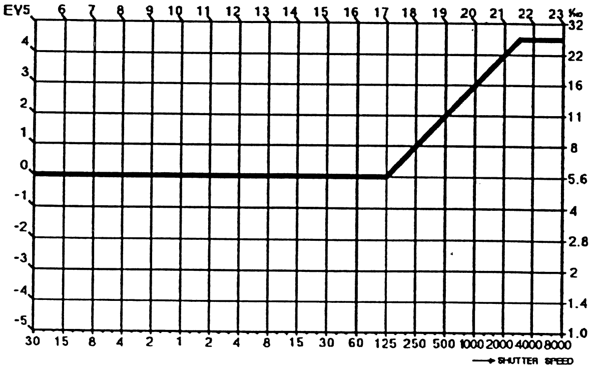


Programmed Image Control modes

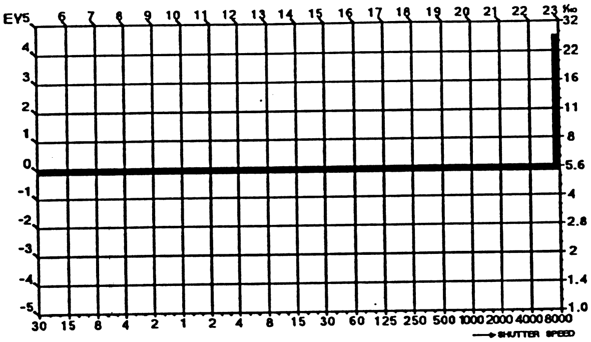
② Portrait (program for lens providing distance data)



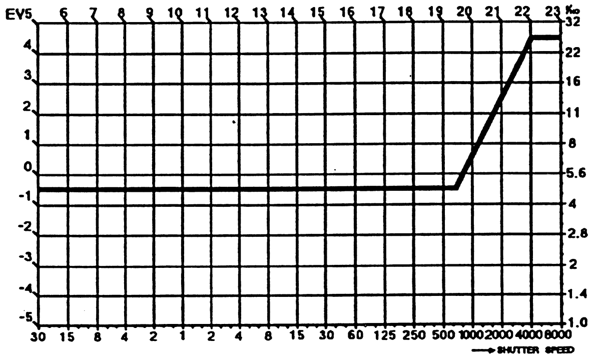
③ Landscape



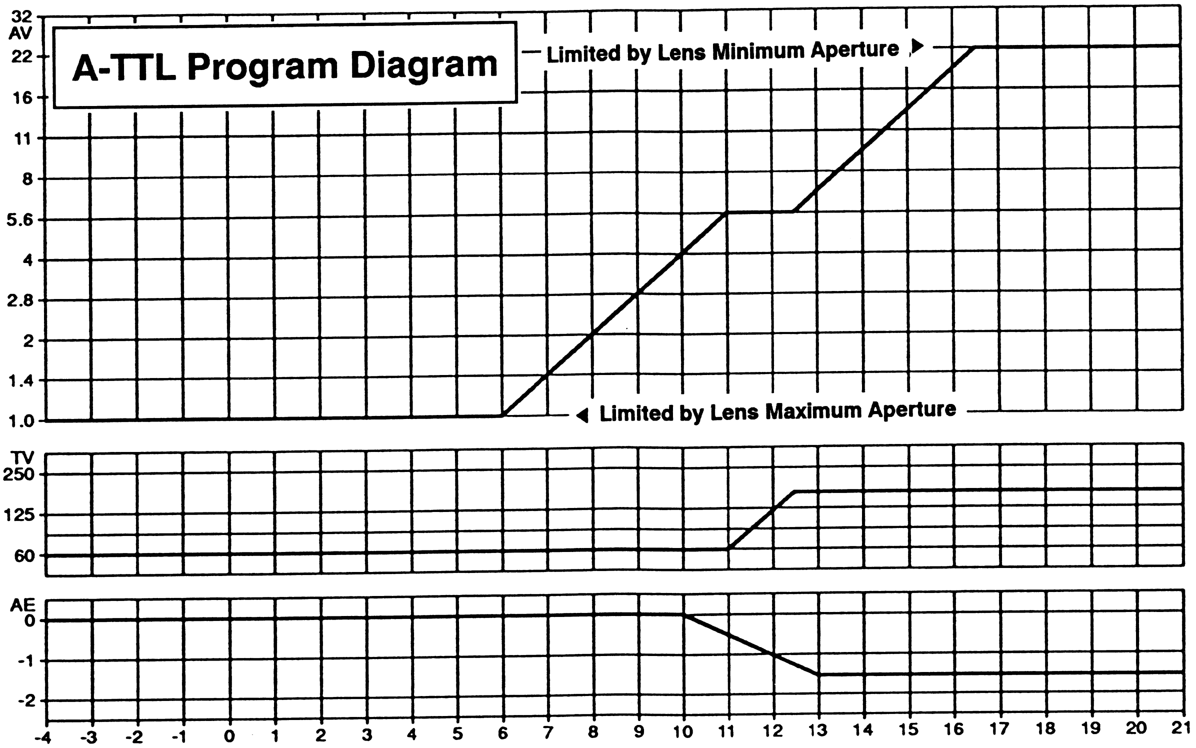
④ Close-up (program for lens providing distance data)

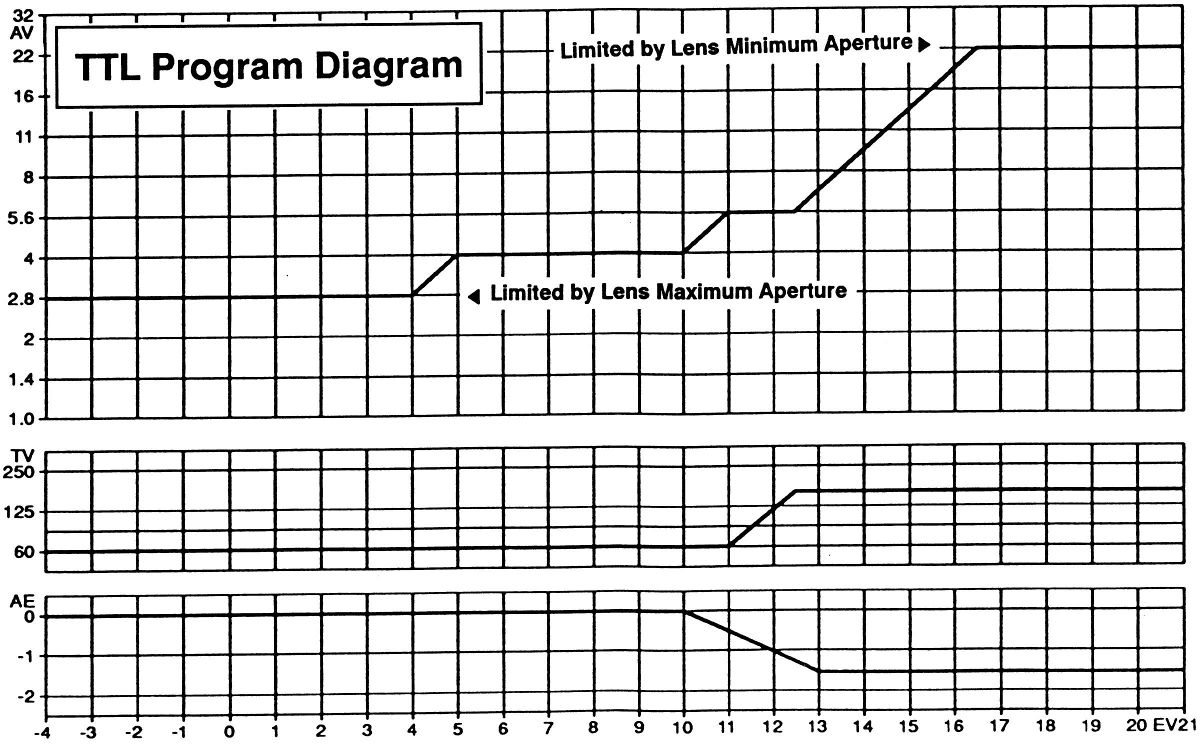


⑤ Sports



# 3. Program Diagrams using Flash





# EOS ACCESSORIES COMPATIBILITY CHART

None of accessories for the EOS-1 can be used. Neither the Bar Code Reader nor the Remote Controller for EOS10 can be used.

Compatibility: ○: Possible △: Possible under certain conditions ×: Not possible

## 1 INTERCHANGEABLE LENSES (ZOOM LENSES)

| **Product name** | **Compatibility** | **Note** |
|---|---|---|
| EF20-35mm f/2.8L | ○ | |
| EF28-70mm f/3.5-4.5 | ○ | |
| EF28-70mm f/3.5-4.5II | ○ | |
| EF28-80mm f/2.8-4.0LU | ○ | |
| EF28-80mm f/3.5-5.6U | ○ | |
| EF28-105mm f/3.5-5.6U | ○ | |
| EF35-70mm f/3.5-4.5 | ○ | |
| EF35-80mm f/4.0-5.6 | ○ | |
| EF35-80mm f/4.0-5.6U | ○ | |
| EF35-105mm f/3.5-4.5 | ○ | |
| EF35-105mm f/4.5-5.6 | ○ | |
| EF35-105mm f/4.5-5.6U | ○ | |
| EF35-135mm f/3.5-4.5 | ○ | |
| EF35-135mm f/4.0-5.6U | ○ | |
| EF50-200mm f/3.5-4.5 | ○ | |
| EF50-200mm f/3.5-4.5L | ○ | |
| EF70-210mm f/4.0 | ○ | |
| EF70-210mm f/3.5-4.5U | ○ | |
| EF75-300mm f/4.0-5.6 | ○ | |
| EF75-300mm f/4.0-5.6U | ○ | |
| EF80-200mm f/2.8L | ○ | |
| EF80-200mm f/4.5-5.6 | ○ | |
| EF80-200mm f/4.5-5.6U | ○ | |
| EF100-300mm f/5.6 | ○ | |
| EF100-300mm f/5.6L | ○ | |
| EF100-300mm f/4.0-5.6U | ○ | |
| EF35-70mm f/3.5-4.5A | ○ | |
| EF35-80mm f/4.0-5.6PZ | ○ | |
| EF100-200mm f/4.5A | ○ | |

## 2 INTERCHANGEABLE LENSES (SINGLE FOCAL LENSES)

| **Product name** | **Compatibility** | **Note** |
|---|---|---|
| EF14mm f/2.8LU | ○ | |
| EF15mm f/2.8FE | ○ | |
| EF20mm f/2.8U | ○ | |
| EF24mm f/2.8 | ○ | |
| EF28mm f/2.8 | ○ | |
| EF35mm f/2.0 | ○ | |
| EF50mm f/1.0LU | ○ | |
| EF50mm f/1.8 | ○ | |
| EF50mm f/1.8II | ○ | |
| EF50mm f/2.5MACRO | ○ | |
| EF85mm f/1.2LU | ○ | |
| EF85mm f/1.8U | ○ | |
| EF100mm f/2.0U | ○ | |
| EF100mm f/2.8MACRO | ○ | |
| EF135mm f/2.8SF | ○ | |
| EF200mm f/1.8LU | ○ | |
| EF200mm f/2.8LU | ○ | |

|  |  |  |
|---|---|---|
| EF300mm f/2.8LU | ○ |  |
| EF300mm f/4.0LU | ○ |  |
| EF400mm f/2.8LU | ○ |  |
| EF500mm f/4.5LU | ○ |  |
| EF600mm f/4.0LU | ○ |  |
| TS-E24mm f/3.5L | ○ |  |
| TS-E45mm f/2.8 | ○ |  |
| TS-E90mm f/2.8 | ○ |  |
| EXTENDER EF 2x | ○ |  |
| EXTENDER EF 1.4x | ○ |  |
| LIFE SIZE CONVERTER EF | ○ |  |
| EXTENSION TUBE EF25 | ○ |  |
| LENS CONVERTER FD-EOS | × | Proper exposure cannot be obtained. |
| M-LENS CONVERTER FD-EOS | × | Proper exposure cannot be obtained. |

## 3 SPEEDLITES

| Product name | Compatibility | Note |
|---|---|---|
| 420EZ | ○ |  |
| 430EZ system | ○ |  |
| 300EZ | ○ |  |
| 200E | ○ |  |
| 160E | ○ | Always fires as each shot. |
| 200M | × |  |
| ML-3set | ○ |  |
| Multiple flash system | ○ |  |
| Off-camera Shoe Cord | ○ |  |

## 4 GRIPS

| Product name | Compatibility | Note |
|---|---|---|
| GR10 (650) | × |  |
| GR20 (for EOS620, w/remote control) terminal | × |  |
| GR50 (for EOS750/850/700) | × |  |
| GR60 (EOS10 Grip Extension) | × |  |
| GR70 (EOS1000 Grip Extension) | × |  |
| VG10 (for EOS5 portrait shot) | ○ |  |

## 5 VIEWFINDER ACCESSORIES

| Product name | Compatibility | Note |
|---|---|---|
| Eye Cup E (650/620) | × |  |
| Eye Cup Eb (750/850) | ○ |  |
| Eye Cup Ed | ○ |  |
| Dioptric Adjustment Lens E (10 kinds) | ○ |  |
| Rubber Frame Ed | ○ |  |
| Focusing Screen E (7 kinds) | × |  |
| Focusing Screen (5QD) | ○ |  |
| Angle Finder B Adaptor Ed | ○ |  |

## 6 DATA BACKS

| Product name | Compatibility | Note |
|---|---|---|
| Quartz Date Back E | × |  |
| Technical Back E | × |  |
| Keyboard Unit TB | × |  |
| Interface Unit TB | × |  |

## 7 FILTERS (NEW) (Old: ○ Except for Color Filters)

| Product name | Compatibility | Note |
|---|---|---|
| Drop-in Circular Polarizing Filter PL-C48 | ○ | |
| Circular Polarizing Filter PL-C52 | ○ | |
| Circular Polarizing Filter PL-C58 | ○ | |
| Circular Polarizing Filter PL-C72 | ○ | |
| Circular Polarizing Filter PL-C77 | ○ | |
| Drop-in Gelatin Filter Holder II | ○ | |
| Gelatin Filter Holder E52/58/72/77 | ○ | |

## 8 GENERAL-PURPOSE EOS CASES

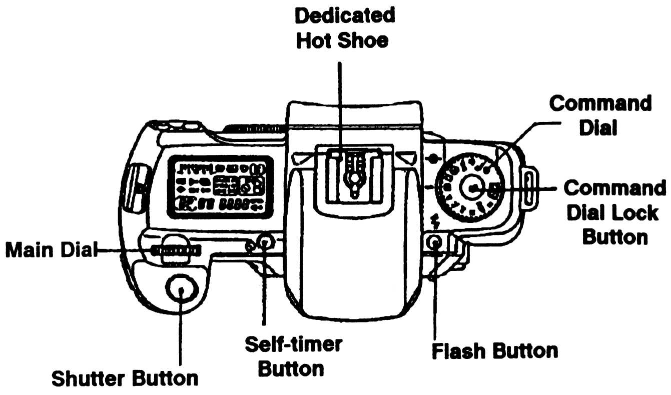
| Product name | Compatibility | Note |
|---|---|---|
| Snap Case SA-4 | ○ | |
| Snap Case SB-4 | ○ | |
| EOS650/620 cases | × | |
| EOS750/850 cases | × | |
| EOS10 cases | × | |
| EOS1000 cases | ○ | |
| EOS100 cases | × | |
| EOS5QD cases | ○ | |

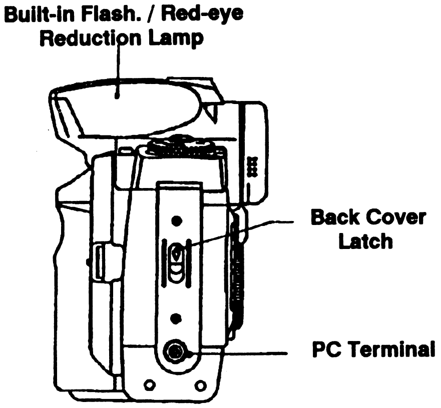
## 9 Other Accessory

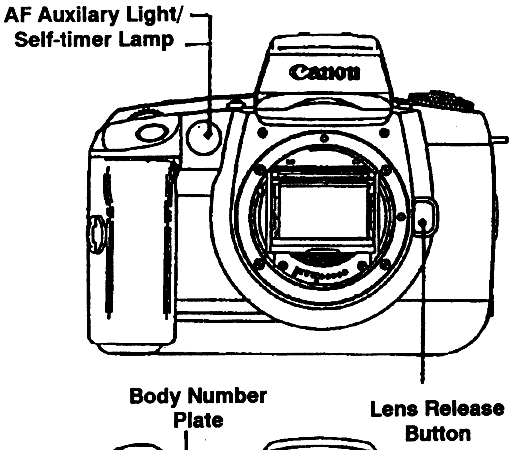
| Product name | Compatibility | Note |
|---|---|---|
| Panorama Adaptor PA-1000 | ○ | |

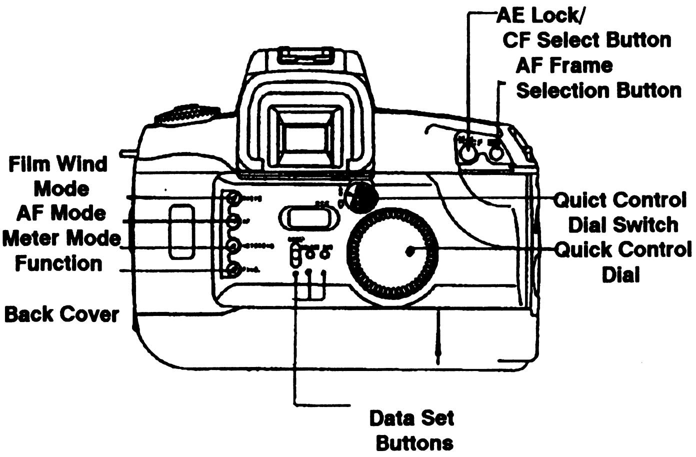
# NOMENCLATURE and DIMENSONS

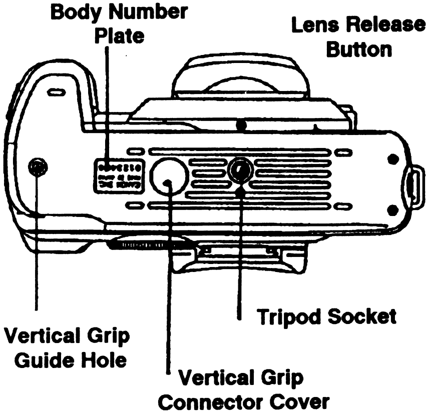
## Nomenclature

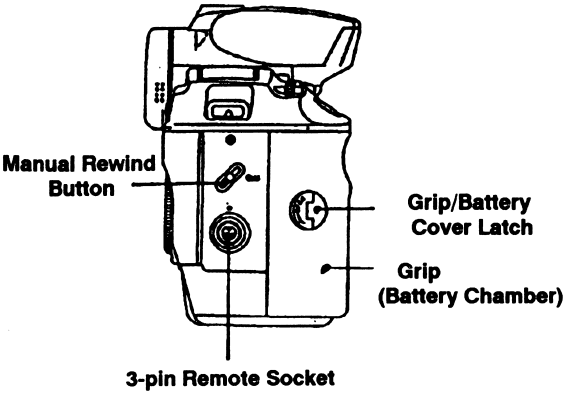

Dedicated Hot Shoe
Command Dial
Command Dial Lock Button
Main Dial
Shutter Button
Self-timer Button
Flash Button


Built-in Flash. / Red-eye Reduction Lamp
Back Cover Latch
PC Terminal


AF Auxilary Light/
Self-timer Lamp
Canon
Lens Release Button

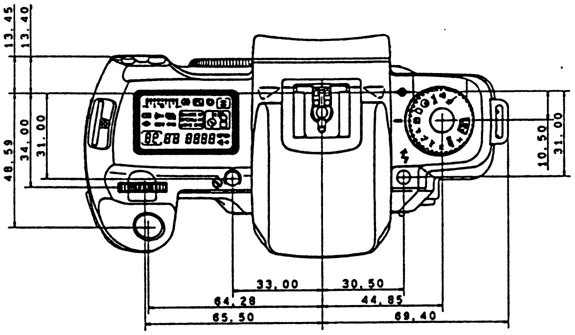

AE Lock/
CF Select Button
AF Frame
Selection Button
Film Wind Mode
AF Mode
Meter Mode
Function
Back Cover
Quict Control Dial Switch
Quick Control Dial
Data Set Buttons

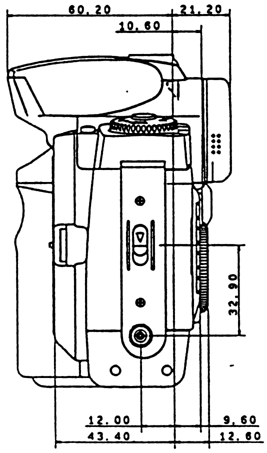

Body Number Plate
Vertical Grip Guide Hole
Tripod Socket
Vertical Grip Connector Cover

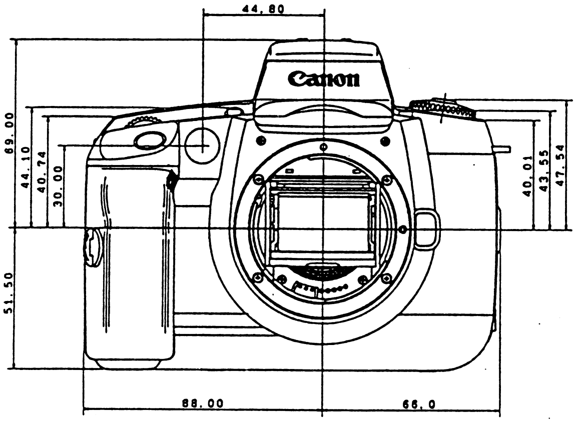

Manual Rewind Button
Grip/Battery Cover Latch
Grip (Battery Chamber)
3-pin Remote Socket

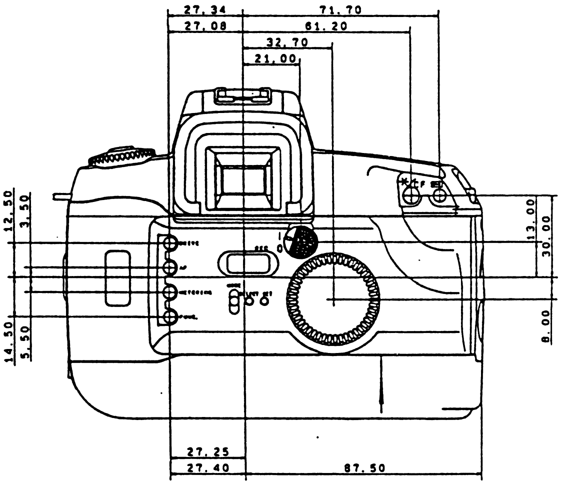
# Dimensions

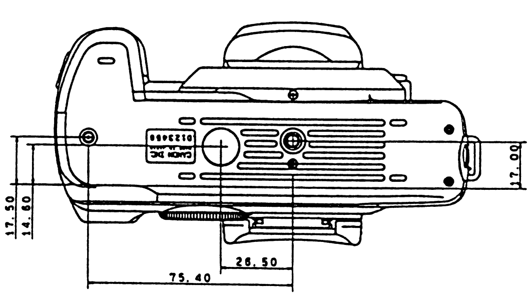
## EOS 5 QD

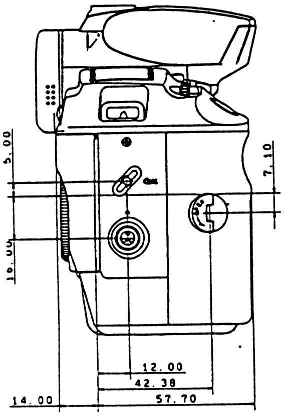

13.45
13.40
34.00
31.00
48.59
10.50
31.00
33.00
30.50
64.28
44.85
65.50
69.40


60.20
21.20
10.60
32.90
12.00
9.60
43.40
12.60

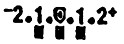
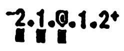
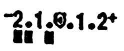
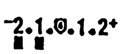

44.80
Canon
89.00
44.10
40.74
30.00
51.50
40.01
43.55
47.54
88.00
66.0


27.34
71.70
27.08
61.20
32.70
21.00
12.50
3.50
14.50
5.50
13.00
30.00
8.00
27.25
27.40
87.50


17.50
14.60
17.00
26.50
75.40


5.00
10.00
7.10
12.00
42.38
14.00
57.70

# PRECAUTIONS

| No. | Precautions | Explanation ⇒ Corrective action |
|---|---|---|
| 1. | Remove the lens hood when using the built-in flash. | This is necessary because the lens hood partially blocks the flash's light. |
| 2. | If a lens wider than 28mm is used with the built-in flash, peripheral illumination will be inadequate. | ⇒ Use the 430EZ or 420EZ. |
| 3. | If the shutter button is jabbed down in red-eye reduction mode, the shutter will not release for 1.5 seconds. | Red-eye reduction takes priority over shutter release. |
| 4. | Manual focusing of a USM lens is impossible while the built-in flash is charging. | The circuit is designed to prohibit USM and flash operation simultaneously to prevent excessive drain on the battery. |
| 5. | Use of an external flash is not recommended in the PIC modes. | The external flash will fire every time in A-TTL or TTL mode, defeating the purpose of the PIC modes. |
| 6. | When using automatic focus point selection, continuous release and AI Servo AF together, the shooting speed will become irregular if the subject moves from one focusing point to another. | Some time is required to refocus when a different focusing point is used (Same as EOS 100/ELAN). |
| 7. | Infrared film cannot be used. | The film transport photodiode is infrared and will fog a 9mm path on the edge of infrared film (about the bottom 15% of a print). |
| 8. | In the QD model, the slowest film usable to insure good imprinting depends on the film transport mode. (ISO 50 for single shot (S) mode, 100 for C and 200 for CHi mode). | Shooting speed is not film-speed dependent. |
| 9. | When AEB mode is set and exposure compensation set to exceed the display capability, the compensation will be correct, but the display will appear as shown at the right. |  When ± 1 stop AEB is set.<br> When exposure compensation is set just to the display limits.<br> When exposure compensation exceeds the limit by 1/2 stop.<br> When exposure compensation exceeds the limit by more than 0.5 stops.<br>(The AEB bracketing width is displayed.) |

| No. | **Precautions** | **Explanation** ⇒ Corrective action |
|---|---|---|
| **10.** | When using the Vertical Grip, if the grip's main switch is off but its shutter button is pressed fully, the shutter will not release at this time; but will release when the main shutter button is pressed halfway (to SW1 on). | The AE Power Winder FN also works in this manner on the New F-1. |
| **11.** | When spot metering is linked to the focus point in use (CF-15), the metering area is not clearly indicated in the viewfinder. | The position is approximately centered on the focus point indicator and the same size as the center spot area. |
| **12.** | Film winding slows during continuous operation in AEB mode. | In AEB mode, the aperture must be fully opened after each exposure to insure the proper working aperture for optimum exposure precision. |
| **13.** | Eye-controlled focus does not function when the camera is held vertically. | The camera switches automatically to automatic focus point selection. |

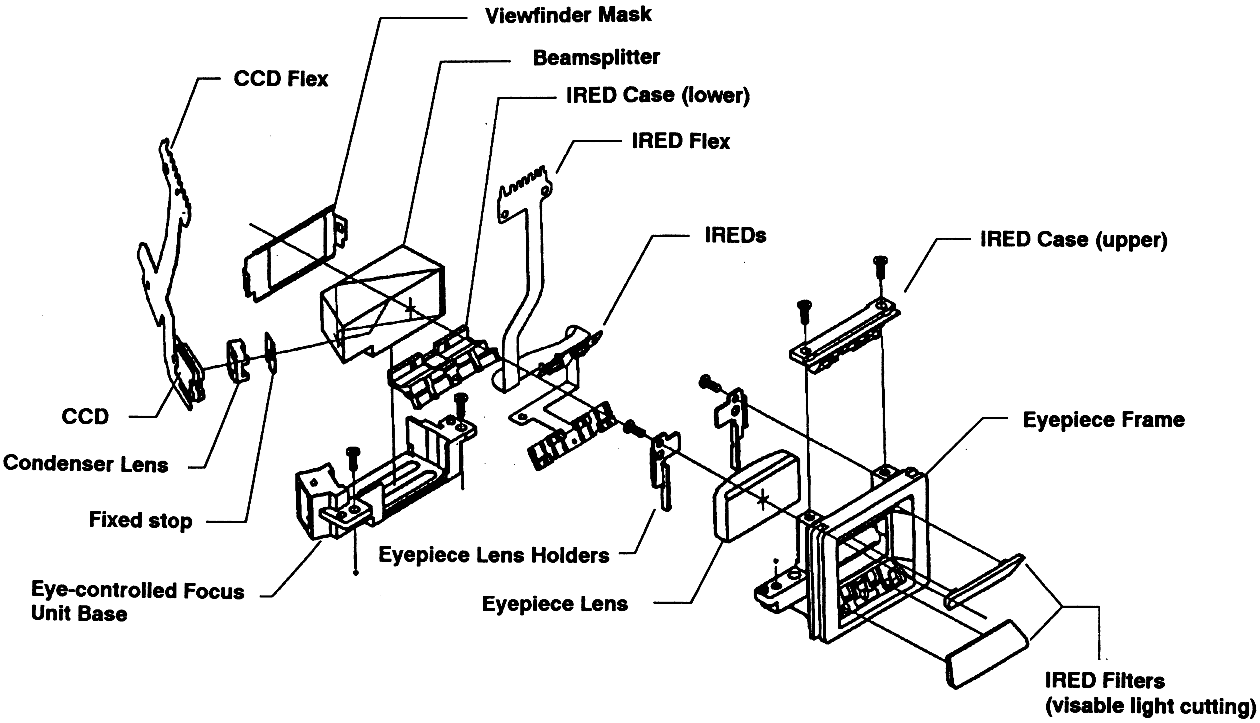
# PART 2. TECHNICAL INFORMATION

# EYE-CONTROLLED FOCUS

“ Eye-controlled Focus ” is a function appearing for the first time on the EOS 5/A2E. This function enables the user to select a desired focusing point by simply looking at the corresponding AF frame in the viewfinder. Moreover, without pressing a single button, the user can close down the aperture for a depth-of-field check by simply looking at the depth-of-field check mark in the viewfinder. These capabilities provide an ideal operation method which allows the user to focus more concentration on composition and less on operation. A detailed description of the Eye-controlled Focus system is provided below.

## 1. Eye-controlled Focus Unit Configuration

The optical system of the Eye-controlled Focus function operates as follows: a pair of infrared tting diodes (IREDs) incorporated in the eyepiece frame illuminate the photographer’s eye, then the IR reflected from the eye back into the camera is reflected by a beam splitter through a condenser lens to a CCD area sensor, where it forms an image of the eyeball for evaluation by the Eye-controlled Focus system.



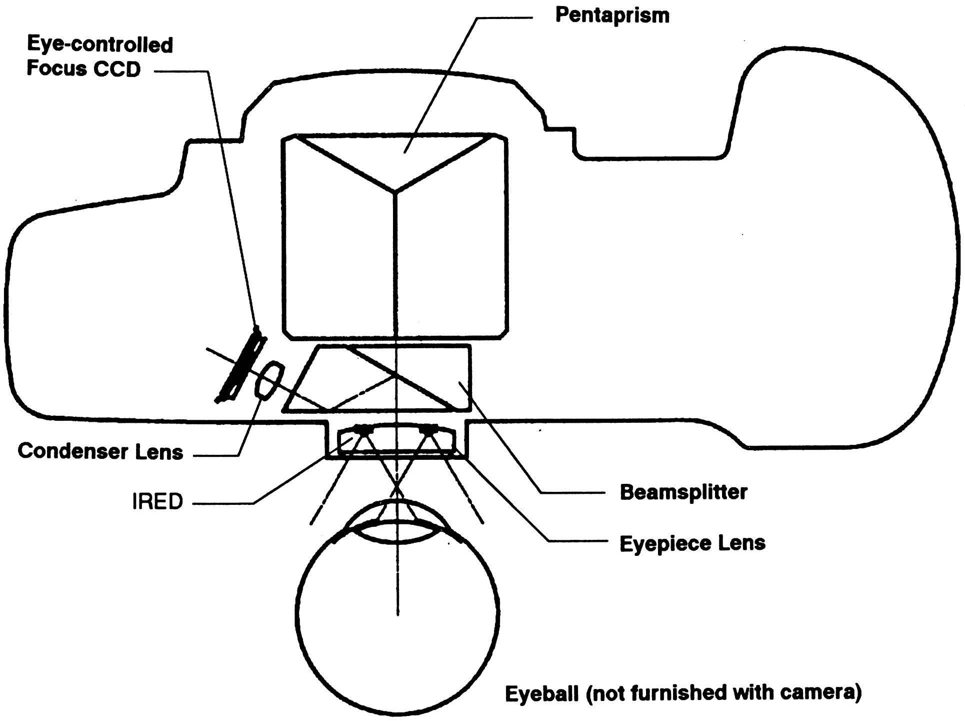
Viewfinder Mask
Beamsplitter
CCD Flex
IRED Case (lower)
IRED Flex
IREDs
IRED Case (upper)
Eyepiece Frame
CCD
Condenser Lens
Fixed stop
Eyepiece Lens Holders
Eye-controlled Focus Unit Base
Eyepiece Lens
IRED Filters (visable light cutting)

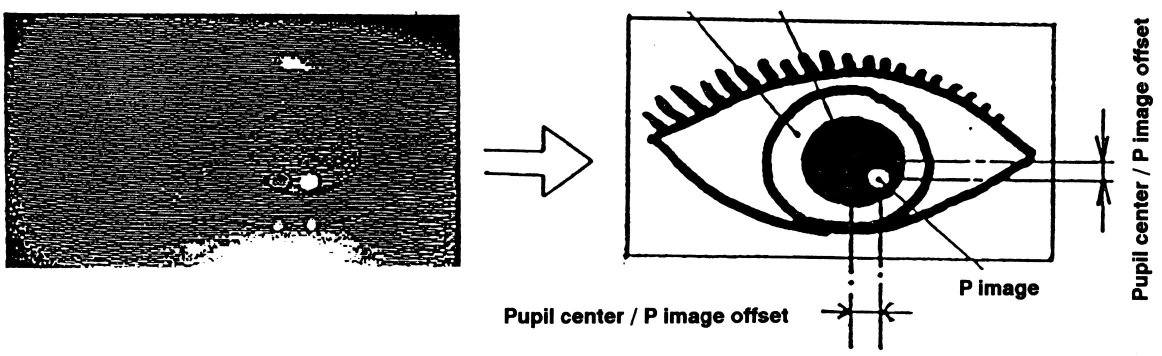
Eye Controlled Focus Unit Construction

# 2. General Operating Principle

## 2-1 Line-of-sight Detection

The drawing shows a simplified optical system, using a single IRED, for the eye-controlled focus function. The user's eye is illuminated by an IRED. The light reflected from the eye forms an image on a CCD area sensor as shown far below. A small highlight, similar to a catchlight is formed near the edge of the pupil by a virtual image from the light reflected from the surface of the cornea. This image is called a PURKINJE IMAGE, or "P image" for short. The position of the P image and the position of the center of the pupil are obtained from the image formed on the CCD area sensor and the offset between the two images is calculated. This result is then used to calculate the rotation angle of the eyeball, which indicates the part of the viewfinder where the user is looking.


Pentaprism
Eye-controlled Focus CCD
Condenser Lens
IRED
Beamsplitter
Eyepiece Lens
Eyeball (not furnished with camera)


Iris
Pupil
P image
Pupil center / P image offset
Pupil center / P image offset

# MEMO

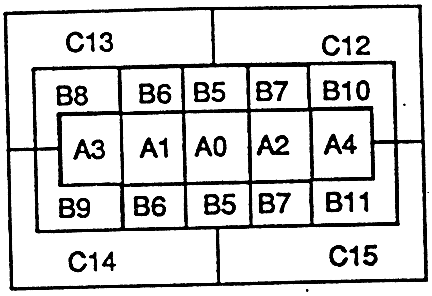
## MEMO

# Exposure Control System

## 1. Light Metering

### 1-1 Metering Optical System and AE Sensors

Four metering systems are built into the EOS 5/A2/A2E: Evaluative Metering, Spot Metering, Center-weighted Average Metering, and TTL-OTF Flash Metering. The evaluative metering and spot metering systems are designed to allow operation corresponding to the five focusing points (spot metering linked to the five focusing points is set using CF-15). The TTL-OTF metering sensor is the same as the sensor used in the EOS 10, providing TTL metering operation corresponding to the focusing points. Also, it should be noted that whereas the evaluative metering sensor is physically divided into 19 sections, actual metering is performed with six of the sections paired into three zone divisions, resulting in the 16 zone divisions indicated.

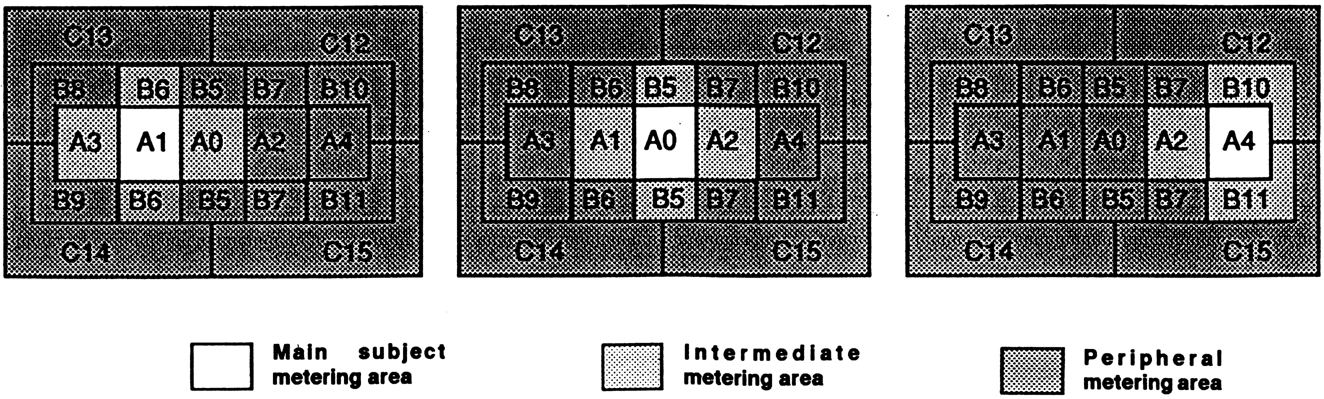


### 1-2 Metering Systems and Sensitivity Distribution

**Evaluative metering**: Evaluative metering in the EOS 5/A2/A2E is basically the same as in the EOS10, with the exception that 16 metering zones are provided to match the EOS5's five focusing points. Metering areas A0-A4 correspond to the AF system's five focusing points, enabling evaluative metering to be performed independently for each focusing point. Actual metering is carried out as shown below, with the metering values of the main subject metering area and the intermediate and peripheral metering areas compared, and exposure compensation of from + 1.5 to - 0.25 stops added when the light level is EV 14 or lower, or up to a maximum of + 4.25 stops added (in 0.25-stop increments) when the light level is EV14-20. (These values do not include compensation for camera position.)

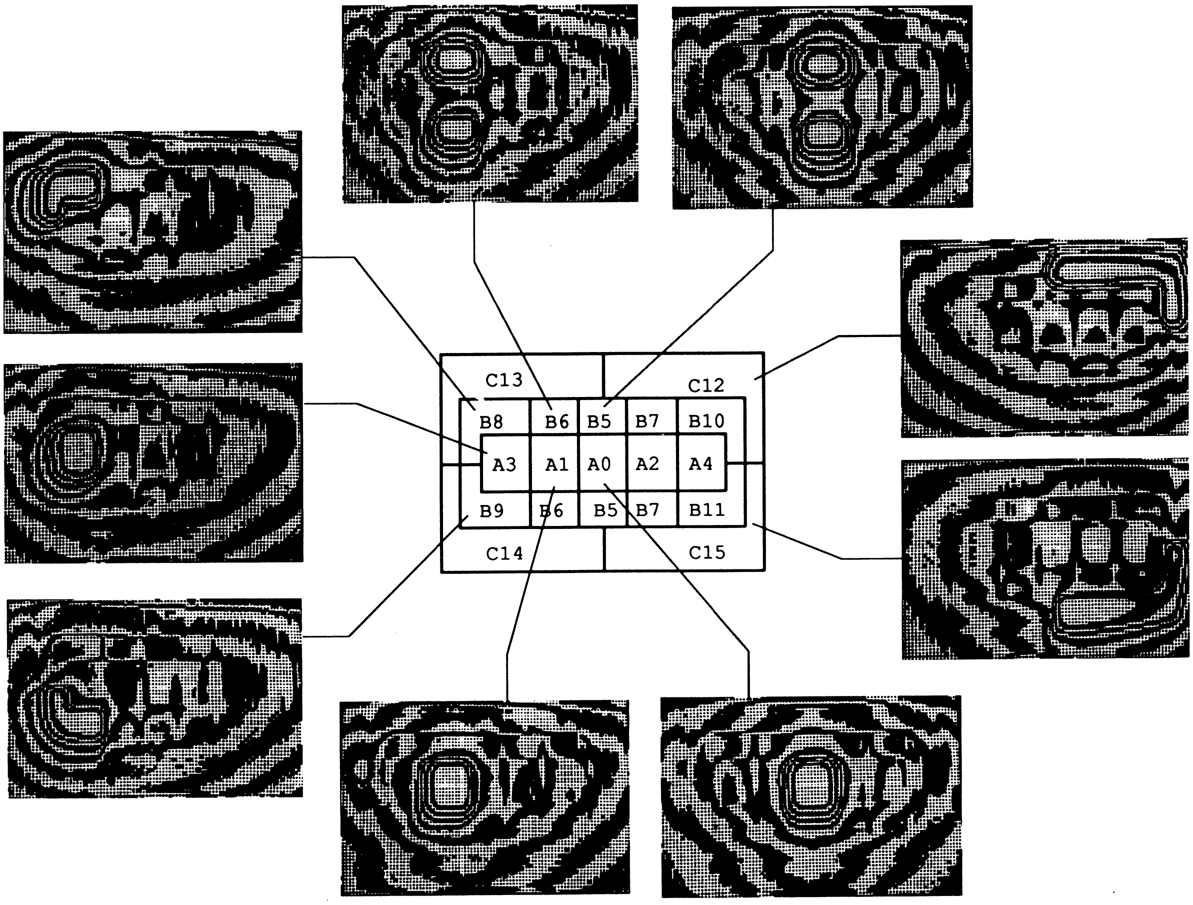
**Camera position compensation:** The EOS 5/A2/A2E uses a position detection switch to determine the orientation (vertical or horizontal) of the camera, and carries out evaluative metering accordingly. This is accomplished using the outer periphery sensors C12-C15 to evaluate the peripheral area of the scene. Regardless of whether the camera is held vertically or horizontally, if the value read by the two sensors at the top (sky) side is more than two stops brighter than the value read by the two sensors at the bottom (ground) side, the two top sensor readings are excluded from the evaluation in order to compensate for the effects of high-brightness areas (such as the sun) in the upper part of the scene.

**Metering Areas Used for Comparison at Each Focusing Point**



**Near-left focusing** **Center focusing** **Far-right focusing**

C13
C12
B8
B6
B5
B7
B10
A3
A1
A0
A2
A4
B9
B6
B5
B7
B11
C14
C15
☐ Main subject metering area
▨ Intermediate metering area
▩ Peripheral metering area



**Metering Patterns for Various Main Subject Metering Areas**

## Spot metering

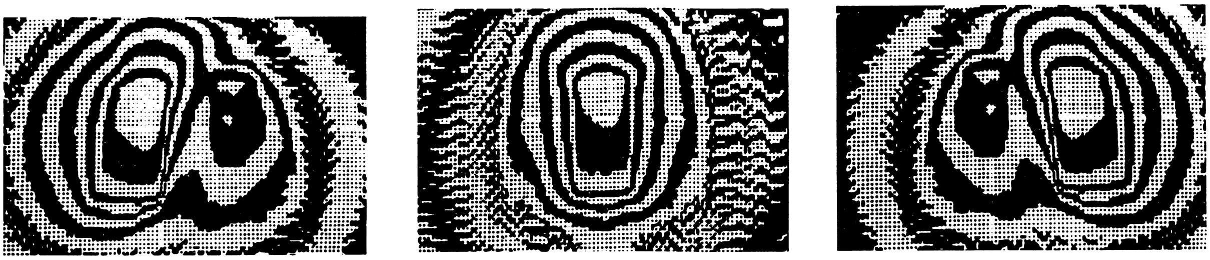
The A0, A1, A2, A3 and A4 sections of the evaluative metering sensor are the spot metering sensors. Spot metering is selected by pressing the metering mode button and operating the main dial. Due to the opinion of many photographers that spot metering should function independently of the focusing points, the standard configuration is with spot metering carried out only at the center. For those users who prefer to have spot metering linked to the focusing points, custom function CF-15 can be set to link spot metering to the focusing point selected by the user. (Central spot metering is automatically set in automatic focusing point selection mode.)

## Center-weighted average metering

Calculation of the metering value in this mode is based on the output of all sections of the 16-zone AE sensor. As true center-weighted average metering is desired without automatic exposure compensation added by the evaluative metering algorithm, the position of the center-weighted point is always in the center of the frame regardless of the selected focusing point, and no compensation is made for different camera positions.

## TTL-OTF Flash metering

Weighted flash exposure control according to light reflected from the main subject is carried out according to the selected focusing point, with the three metering sensors allocated to the center focusing point, the two left focusing points and the two right focusing points, respectively. Metering sensitivity distribution characteristics of the TTL sensors are shown below.

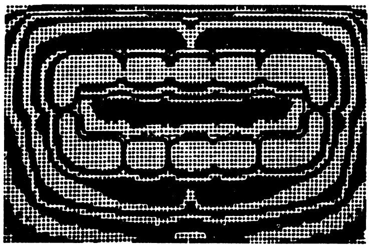


**Left metering sensor** **Center metering sensor** **Right metering sensor**

**TTL Sensor Metering Sensitivity Distribution**

## Peripheral metering

Peripheral metering is not a user-selectable option. It is an automatic function, called "body metering" in Japanese, used to determine the aperture used in A-TTL and TTL flash operation based on the background light level. The sensitivity distribution characteristics are shown below.



**Peripheral Metering Sensitivity Distribution**

## 2. Exposure Control

### 2-1 Automatic Exposure Control

Except for Depth-of-Field AE mode, modified for compatibility with the Eye-controlled Focus function) and the new X mode, the EOS 5/A2/A2E's automatic exposure modes are basically the same as the EOS 10.

If a focusing point has been pre-selected by the user, Depth-of-Field AE operation is the same as the EOS 650, with priority given to obtaining sharp focus between two subject points specified by the user. When combined with automatic focusing point selection, however, the camera automatically uses the center focusing point for measuring the two subject points. When Eye-controlled Focus mode is turned on, also, the camera automatically uses the center focusing point for determining the depth-of-field points. (In this case, the Eye-controlled Focus indicator in the viewfinder goes out.)

### 2-2 X Mode

This mode is provided mainly for studio photography using high powered electronic flash. The main feature of this mode is that it lets the user vary the shutter speed between (1/60 and 1/200 second according to the flash unit being used. Aperture and shutter speed input operation using the electronic input dials is opposite of manual mode, with the main dial used for setting the aperture value and the quick control dial used for setting the shutter speed. AEB exposure bracketing varying the aperture is also possible in X mode.

## 2-3 AE Lock

In one-shot AF mode when using evaluative metering, AE lock is carried out automatically after focusing is completed. In addition, AE lock can be freely carried out by the use in any metering mode by simply pressing the AE lock button during metering. The metering timer starts when the AE lock button is released. The meter reading can be renewed by pressing the AE lock button again. AE lock is canceled when the metering timer goes off, when the command dial is moved, or when the flash button is pressed.

## 2-4 Exposure Compensation

The EOS 5/A2 is equipped with AEB auto exposure bracketing) and manual exposure compensation functions, both of which allow the exposure to be compensated in 1/2-stop increments within a range of ± 2 stops. Unlike previous EOS models, the AEB function automatically makes three exposures in the order: correct exposure → underexposure → overexposure. Exposures are made either one frame at a time or three frames continuously according to the film transport mode.

Manual exposure compensation operation is the same as the EOS 100/ELAN.

## 2-5 Manual Exposure

Manual exposure operation is the same as on the EOS-1, with shutter speeds set by the main dial and apertures set by the quick control dial. Exposure determination is carried out using the metered manual exposure method (except for the USA versions, which uses the zero method).

## 2-6 Flash Exposure Compensation

The flash exposure compensation function for the built-in flash is the same as the EOS100/ELAN, with flash exposure compensation mode set by pressing the flash button again once the flash is popped up, and the flash exposure compensation set by operating either the main dial or the quick control dial. The EOS 5/A2's flash exposure compensation function can also be used in conjunction with external flash unit; however, if flash exposure compensation is also set on the external flash unit, the external flash unit settings have priority.

Flash exposure compensation is also possible when using the multiple flash accessory system. However, if flash exposure compensation is also set on the external flash unit attached to the TTL hot shoe adapter, the external flash unit settings have priority.

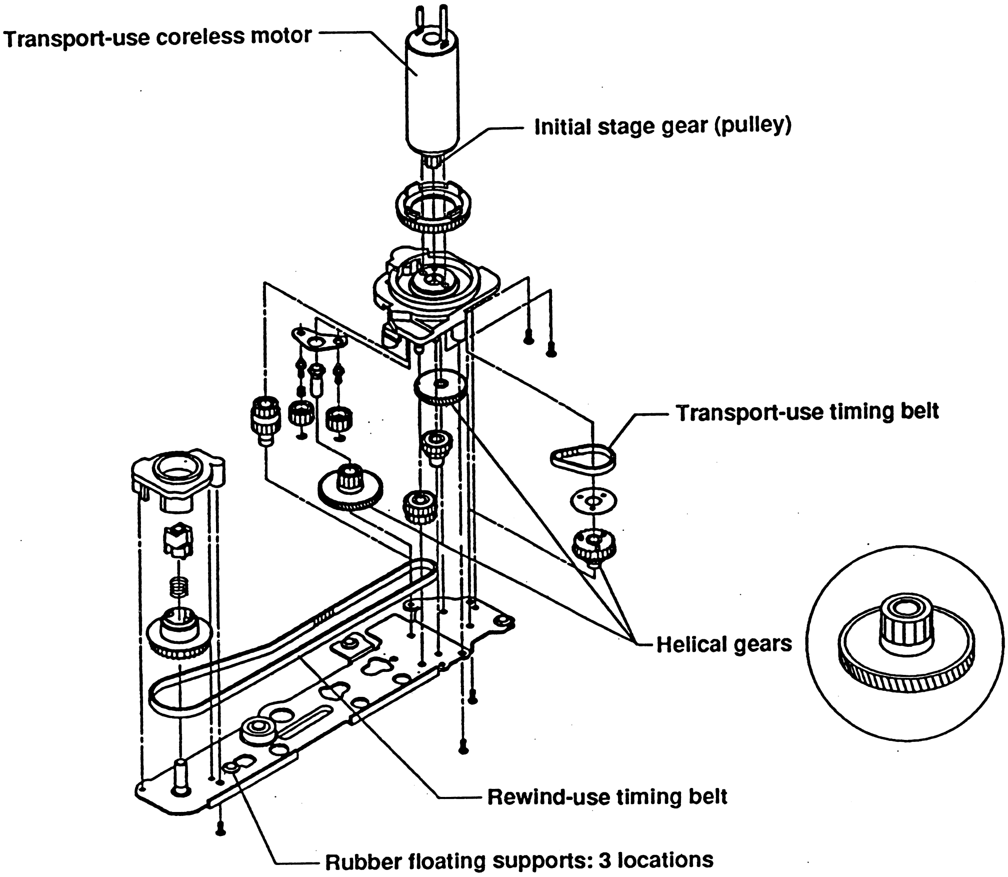
# NOISE REDUCTION TECHNOLOGY

An explanation of camera operation noise, noise transmission characteristics and methods of noise prevention is provided in the EOS100/ELAN Technical Information, under the title, Sound Suppression. With the EOS100/ELAN, emphasis was placed on reducing noise in the main noise-producing components — the film transport system, and shutter/mirror charging mechanisms. The EOS 5/A2/A2E makes use of these same noise reduction techniques, and in addition employs means for reducing noise generated by movement of the mirror.

## 1. Film Transport System

The film transport system makes use of exactly the same mechanism as the EOS 100/ELAN, with the exception that helical gears are used in the 2nd and 3rd stages of the reduction gear train where gear engagement speed is still relatively high following the initial reduction stage. Use of helical gears improves engagement efficiency and gear strength, enabling use of a softer gear material to reduce the high-frequency components of the annoying high-pitched noise caused by high-speed gear engagement. Moreover, pulse-width modulation of the power source (PWM control)* is used for driving the film transport motor, allowing reduction of motor speed during rewinding for even quieter operation. Power fluctuation is dealt with by varying the modulation rate according to the power source voltage level, realizing stable motor rotation speed.

Despite the fact that the film winding speed is higher than the EOS 100/ELAN, the measures just described keep winding noise down to the same level as the EOS 100/ELAN and reduces film rewinding noise to approximately 40% of the EOS 100/ELAN level, while improving the overall sound quality through reduction of the high-frequency components.


Transport-use coreless motor
Initial stage gear (pulley)
Transport-use timing belt
Helical gears
Rewind-use timing belt
Rubber floating supports: 3 locations

*: PWM control is a control method which applies a constant amplitude, but varying width voltage pulse to the motor winding by switching the power element of the motor drive circuit on and off. This controls the effective voltage applied to the motor winding by varying the pulse width.

## 2. Mechanism Charging System

### 2-1 Shutter and mirror charging

The charging system uses a coreless motor for charging the shutter and mirror, with a planetary gearset switching mechanism incorporated in the reduction gear train to switch between high and low speeds. Use of two gear ratios ensures performance while reducing operation noise. This shutter, with its high top speed of 1/8000 second, requires more force to charge than shutters with lower top speeds. The lower gear ratio is selected to guarantee charging of the 1/8000 second shutter at any operational battery above the operation inhibit voltage.

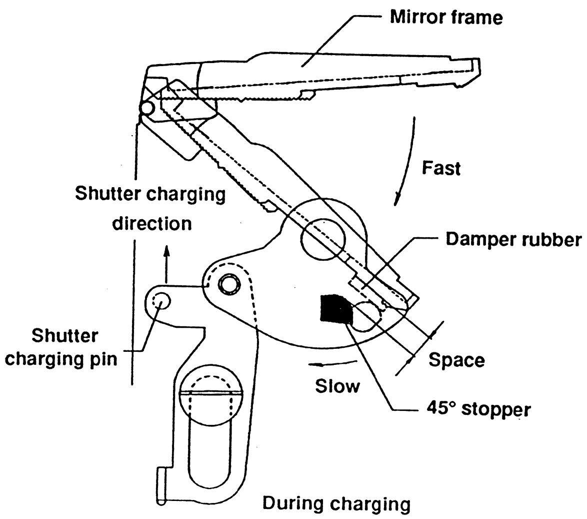
With a new battery, however, use of this low gear ratio would cause the motor to run at speeds in excess of 10,000rpm, resulting in excessive noise. While the battery is still strong, therefore, the system switches to the high gear which increases the load on the motor and reduces the motor speed. In addition, PWM control is used when the motor drive is in "c" mode, reducing motor speed to around 4,000rpm and thus lowering charging operation noise to an inconspicuous level.

### 2-2 Mirror-up operation

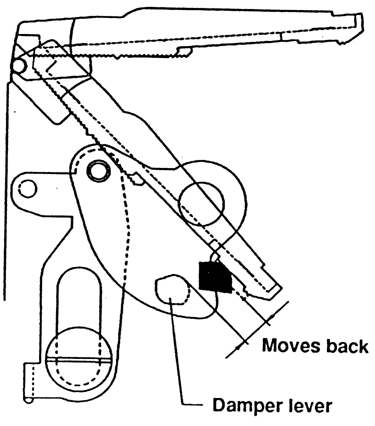
Noise caused by mirror movement is largely eliminated in the EOS 5/A2/A2E. The level of the impact noise that occurs when the mirror swings up varies greatly depending on the mirror movement speed. With the spring drive mirror-up system used in other EOS SLRs such as the EOS-1, 10, 100/ELAN and 1000/REBEL, the velocity of the mirror edge increases greatly as the mirror moves up, resulting in a high impact noise. As speed control is difficult with a spring driven system, the mirror-up operation is motor-driven Although motor-driven mirror operation is also used in models such as the EOS 650 and 750, the this mirror motor-drive system employs PWM control to insure stable drive performance regardless of fluctuations in the power source voltage level. Moreover, the cam lift of the mirror-up cam is designed to move the mirror up smoothly in a manner which keeps the mirror movement speed from increasing too much near the end of its swing, thus minimizing impact noise.

### 2-3 Mirror-down operation

With pervious models, the mirror return is stopped at the 45° position by direct contact with a stopper. Rubber or other cushioning material cannot be used for this stopper in AF cameras because mirror positioning precision would be lost, adversely affecting rangefinding. Because of this, the impact noise caused by the mirror striking the stopper has not been dampened in previous EOS models. In the EOS 5/A2/A2E, however, a mechanism is employed to reduce impact noise. Immediately before the mirror completes its downward movement, the damper rubber attached to the back of the mirror makes contact with the damper lever, which is linked to the shutter charging mechanism.. This lever absorbs the primary impact and slows the mirror, then rotates back out of the way, completely free of the mirror to allow the precision surface of the mirror frame to rest directly on the stopper, thus maintaining the high mirror-positioning accuracy necessary for the AF system.



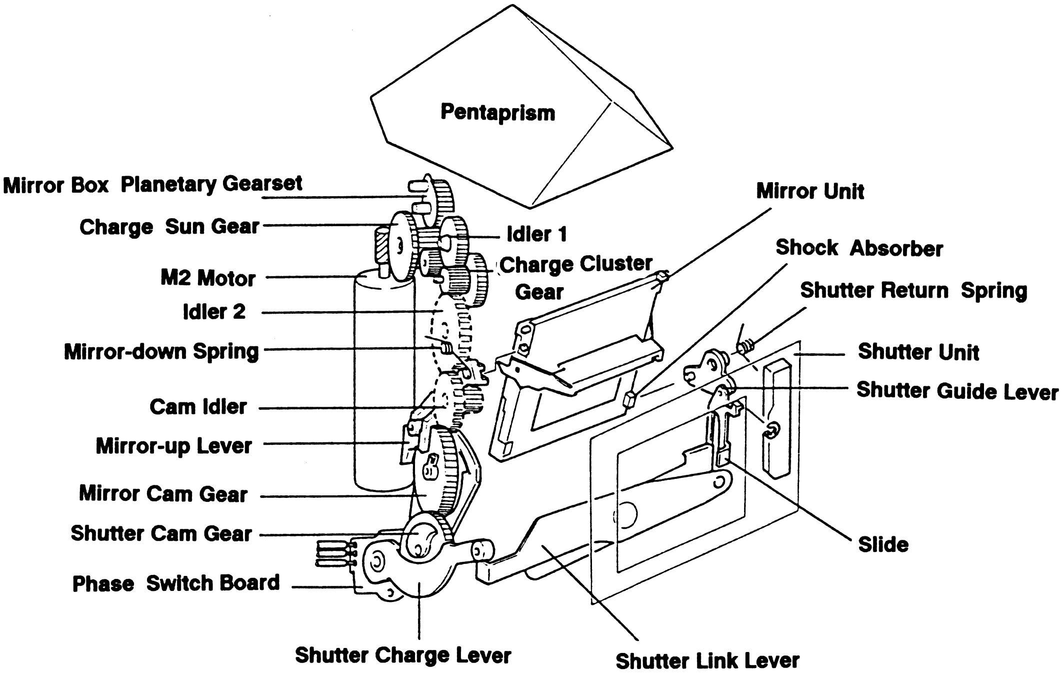
During charging



Charging completed

# SHUTTER and MIRROR OPERATION

## 1. Nomenclature


Pentaprism
Mirror Box Planetary Gearset
Charge Sun Gear
M2 Motor
Idler 2
Mirror-down Spring
Cam Idler
Mirror-up Lever
Mirror Cam Gear
Shutter Cam Gear
Phase Switch Board
Idler 1
Charge Cluster Gear
Mirror Unit
Shock Absorber
Shutter Return Spring
Shutter Unit
Shutter Guide Lever
Slide
Shutter Charge Lever
Shutter Link Lever

## 2. Function

| | | |
|---|---|---|
| 1. | M2 Motor | Bi-directional motor - drives mirror and shutter charge |
| 2. | Mirror Box Planetary Gearset | Gear shifting controlled by power supply voltage |
| 3. | Charge Sun Gear | Sun gear of planetary gearset |
| 4. | Idler 1 | High gear idler gear |
| 5. | Charge Cluster Gear | Large gear is high gear, small gear is low gear (gear ratio shift) |
| 6. | Idler 2 | Idler gear |
| 7. | Cam Idler | Idler gear |
| 8. | Mirror-down Spring | Pulls mirror down part way |
| 9. | Mirror-up Lever | Lifts the mirror when driven by the mirror-up cam |
| 10. | Mirror Cam Gear | Phaser and lifts mirror |
| 11. | Shutter Cam Gear | Coupled to mirror cam gear, it charges the shutter |
| 12. | Phase Switch Board | Provides timing signals for mirror operation and shutter charge |
| 13. | Shutter Charge Lever | Shutter charging |
| 14. | Shutter Link Lever | Shutter charging |
| 15. | Slide | Shutter charging |
| 16. | Shutter Guide Lever | Shutter charging |
| 17. | Shutter Return Spring | Returns shutter to ready position |
| 18. | Shock Absorber | Catches mirror just before the mirror hits bottom to quieten operation |

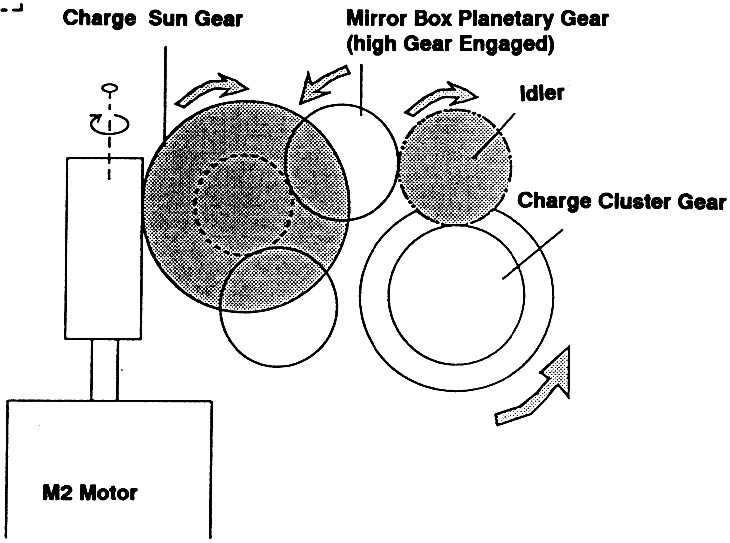
# 3. Mirror Box Operation Flow Chart

| | Remarks |
|---|---|
| SW2 on (Release) | |
| Battery Check | Depending on available battery power high or low speed gearing is used. The default position is high gearset engaged. |
| Power to Mg3-1, Mg3-2 | |
| M2 Motor on | Normal rotation ⇒ high gearset engaged. Reverse rotation ⇒ low gearset engaged. |
| Mirror starts up | Motor lifts mirror |
| Shutter 1st Latch off<br>(double light shield off) | As the shutter cam gear turns, the shutter charge lever is released, releasing the shutter first latch, and the double light shield. |
| "Mirror UP' Signal | The phase (timing) switch board (CMSP1,2) issues mirror up completion signal. |
| M2 Motor off | |
| Communication with lens<br>(working aperture set) | Aperture determined by latest calculation set. |
| Mg3-1 current off<br>(1st curtain runs) | |
| EXPOSURE TIME | |
| Mg3-2 current off<br>(2nd curtain runs) | |
| M2 Motor on | |
| Mirror down,<br>Shutter charging starts | Mirror is returned part way by spring pressure, then the rubber on the back of the main mirror is caught an auxiliary pin on the Shutter Guide Lever and then allowed to come quietly to rest against the 45 ° stopper. |
| "Mirror DOWN" Signal | The phase switch board (CMSP1,2) issues mirror down completion signal. |
| M2 Motor off | |

# 4. Individual Gear Rotation

## 4-1 High-Low Gear Shift

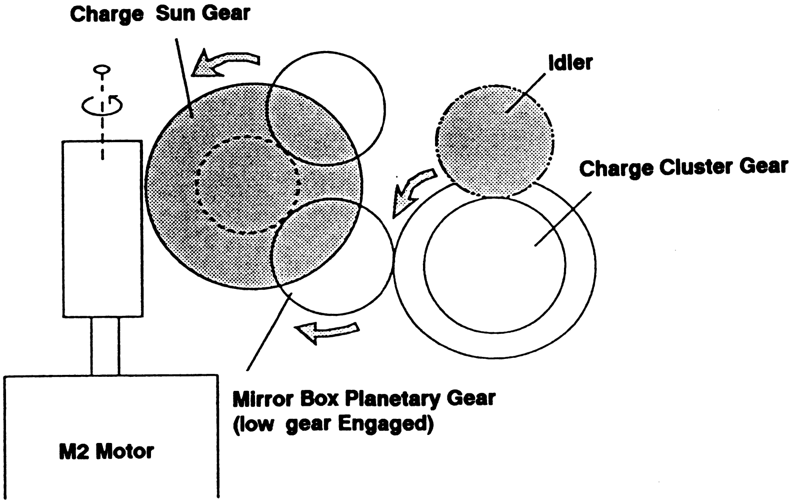
**High Gear Operation**


Charge Sun Gear
Mirror Box Planetary Gear
(high Gear Engaged)
Idler
Charge Cluster Gear
M2 Motor

1) When the shutter button is pressed to SW2 on, the battery is checked. If the voltage is high, the motor turns forward (clockwise).

2) The sun gear drives one of the planet gears against the idler which is engaged with the charge cluster gear's smaller diameter gear.

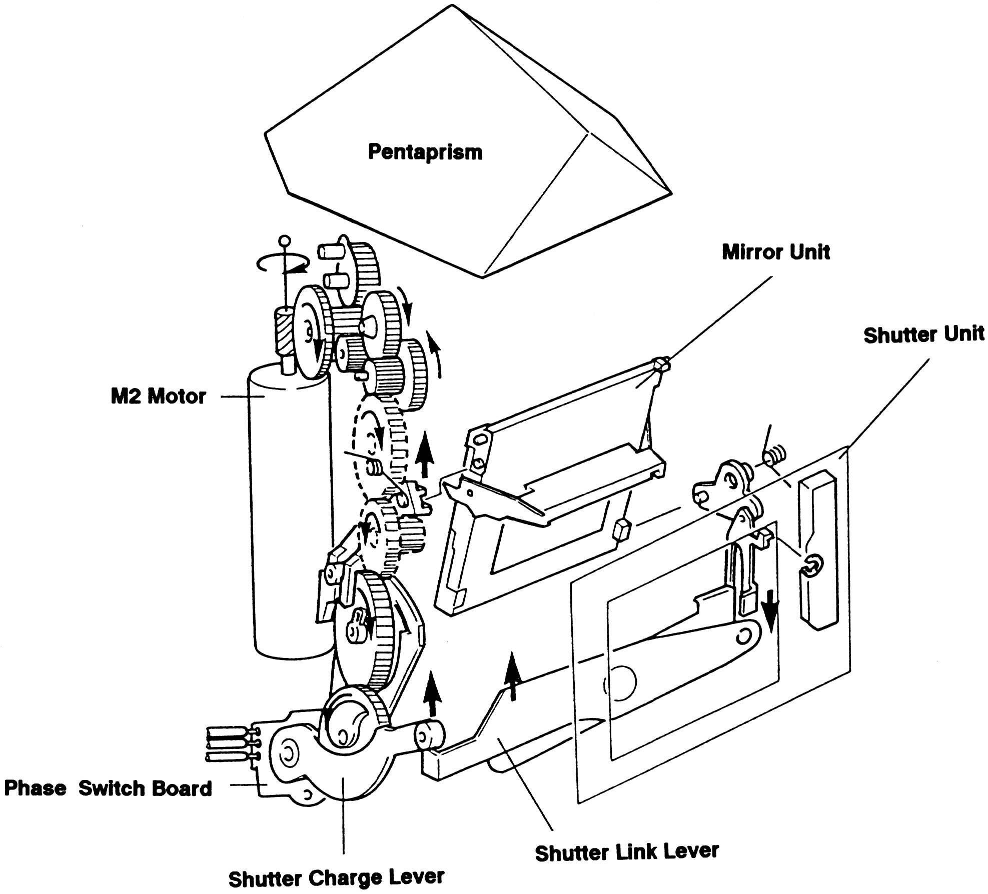
**Low Gear Operation**


Charge Sun Gear
Idler
Charge Cluster Gear
Mirror Box Planetary Gear
(low gear Engaged)
M2 Motor

1) When the shutter button is pressed to SW2 on, the battery is checked. If the voltage is low, the motor turns in the reverse direction.

2) The sun gear drives the other one of the planet gears directly against the charge cluster gear's larger diameter gear.

## 4-2 Gear Train Operation (Mirror Up)


Pentaprism
Mirror Unit
Shutter Unit
M2 Motor
Phase Switch Board
Shutter Link Lever
Shutter Charge Lever

1) When the shutter button is pressed to SW2 on, the battery is checked. If the voltage is high, M2 motor turns forward (clockwise).

2) The sun gear drives one of the planet gears against Idler 1, which is engaged with the charge cluster gear's smaller diameter gear.

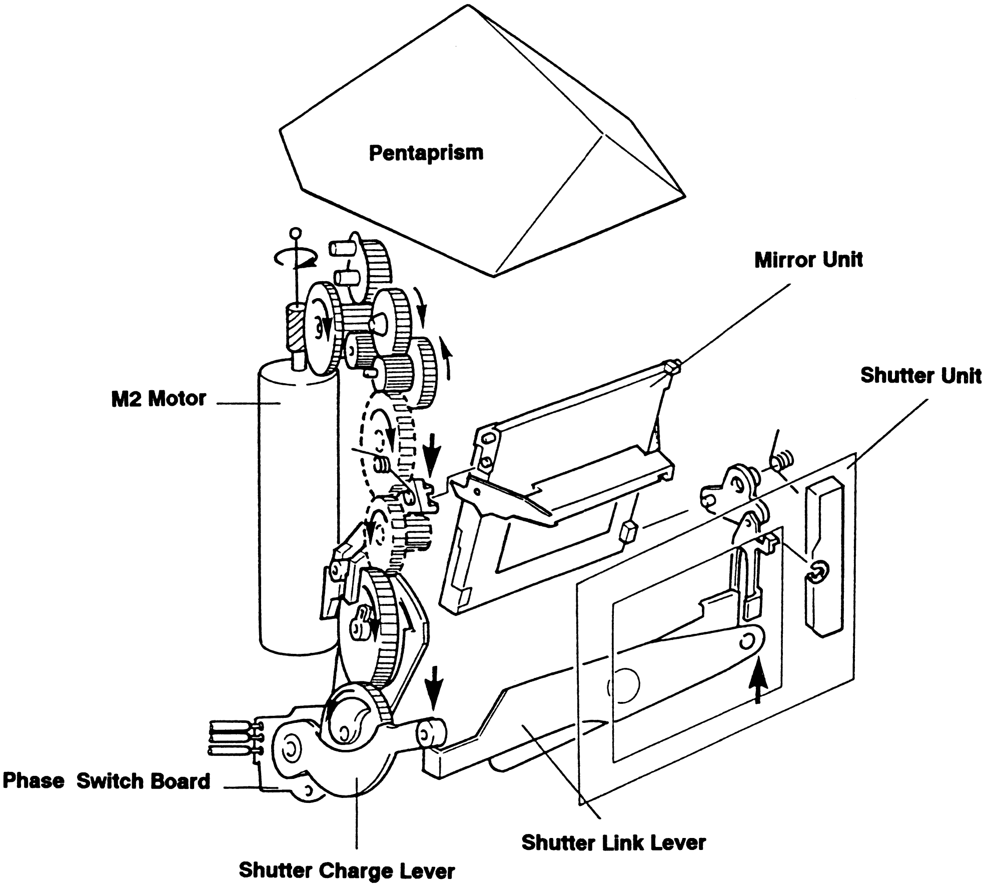
3) The remainder of the gear train turns as indicated, driving the Mirror Cam Gear.

4) The cam of Mirror Cam Gear lifts the mirror Lever, driving the mirror up.

5) When the timing phase switch issues the 'mirror up' signal, M2 motor stops.

Shutter Operation starts (omitted)

## 4-3 Gear Train Operation (Mirror Down)


Pentaprism
Mirror Unit
Shutter Unit
M2 Motor
Phase Switch Board
Shutter Link Lever
Shutter Charge Lever

1) After the exposure is completed M1 motor starts, winding one frame and stops.

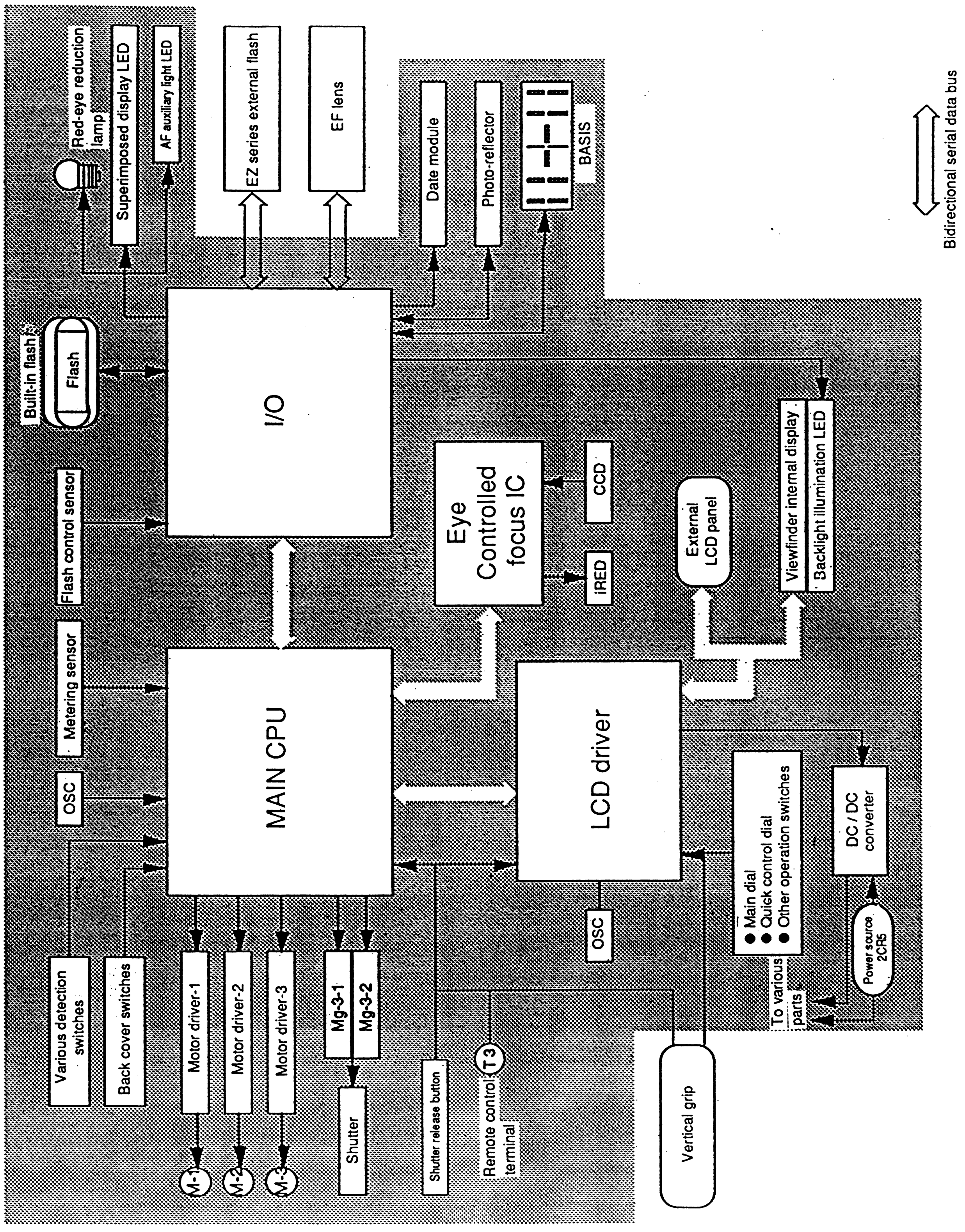
2) After M1 Motor stops and the winding completion signal is issued, M2 Motor starts again in the forward direction.

3) The sun gear drives the planet gear against Idler 1, the Charge Cluster Gear and the remainder of the gear train turns as indicated, driving the Mirror Cam Gear to lower the mirror and charge the shutter.

4) When the timing phase switch issues the 'mirror down' signal, M2 motor stops.

5) Motor M1 starts and film transport is under way.

# BLOCK DIAGRAM


Built-in flash
Flash
Red-eye reduction lamp
Superimposed display LED
AF auxiliary light LED
EZ series external flash
EF lens
Date module
Photo-reflector
BASIS
I/O
Flash control sensor
Metering sensor
OSC
MAIN CPU
Eye Controlled focus IC
CCD
iRED
External LCD panel
Viewfinder internal display
Backlight illumination LED
LCD driver
OSC
● Main dial
● Quick control dial
● Other operation switches
DC / DC converter
Power source 2CR5
To various parts
Various detection switches
Back cover switches
Motor driver-1
Motor driver-2
Motor driver-3
Mg-3-1
Mg-3-2
Shutter
M-1
M-2
M-3
Shutter release button
T3
Remote control terminal
Vertical grip
Bidirectional serial data bus

# BLOCK DIAGRAM EXPLANATION

## 1. MPU (Main CPU)

The MPU controls all functions of the camera either directly or indirectly. In the 'standby' condition the DC/DC Convertor is off so power is not applied to most circuits. When a input through the LCD Driver turns the DC/DC Convertor on, the MPU is reset, and the program starts. The main functions of the MPU are:

**1-1** Exposure Control

1) From the metering sensor input, it determines shutter and aperture combinations and controls the shutter and lens aperture.

2) In flash modes it controls flash duration.

**1-2** Film Transport Control

Film Transport (winding and rewind) as well as mirror movement and shutter charge motor operation are controlled.

**1-3** Autofocus Control

1) Ranging (BASIS data calculations and focus point determination)

2) Focusing (Lens data control and lens focusing instructions)

**1-4** Miscellaneous

Camera mode setting, Display control, battery check, film cartridge sensing, internal flash zoom position control.

## 2. LCD Driver

The LCD Driver is active whenever the camera has battery power. It controls the LCD display and monitors external switch inputs. The main unctions are:

**2-1** External switch monitor; When an external switch is activated, it turns the DC/DC Convertor on and wakes up the MPU, after which it receives instructions from the MPU.

**2-2** Using instructions from the MPU, it drives the external and viewfinder LCDs.

**2-3** Camera Condition Memory; The LCD Driver memorizes the camera condition i.e. Exposure mode, Film Transport mode, AF mode, Film speed while the DC/DC Convertor is off.

**2-4** Miscellaneous; It controls the 32KHz and 20MHz oscillators and the state of the DC/DC Convertor (E1 ON).

## 3. Interface IC (I/O)

The I/O is the interface between the MPU and the BASIS module, the built-in flash, the LEDs and accessories. The main functions are:

**3-1** Communications interface between MPU and ancillary equipment (Lens, Flash). It is directed by SELECT signals from the MPU.

**3-2** Flash Mode Information Input; Determines type of flash and detects flash ready signal.

**3-3** Flash duration and flash level compensation

**3-4** Analog Input Controller; VBAT, temperature compensation switching

**3-5** BASIS Control; After receiving I/O drive signal fro MPU, it generates the BASIS clock.

**3-6** Miscellaneous; It also controls the quartz date module in models with QD, the superimposed focusing mark display, the finder backlight LED, the AF Auxiliary Lamp, and the red-eye reduction lamp.

## 4. Y Driver (Eye-controlled Focus IC, except A2)

The Y Driver controls the Eye-controlled Focus circuitry including the IREDs and CCD area sensor. (Not [U])

## 5. BASIS (|| + ||)

The BASIS is a line sensor array used to convert the subject contrast into video information and to send this information to the I/O IC when requested by the I/O.

## 6. CCD (Area Sensor) (except A2)

This area sensor forms an image of the eye from the infrared radiation reflected from the eye when illuminated by the IREDs which are part of the same Eye-controlled Focus unit. It is controlled by the Y Driver.

## 7. Exposure IC

The exposure IC is a 16-segament evaluative photosensor. It is weighted to correspond to the AF sensor in use.

## 8. TTL-OTF Flash Control IC

This is the same 3 section TTL-OTF sensor used in the EOS 10. It is controlled by the I/O IC and weights the flash control according the the AF sensor in use.

## Motor Drivers (MTDR1, 2, and 3)

These are the drivers for the corresponding motor (M1, M2, and M3). The drive the motor forward or reverse according to directions from the MPU. Upon direction from the MPU they gate on the TMOS to power up the lens circuits.

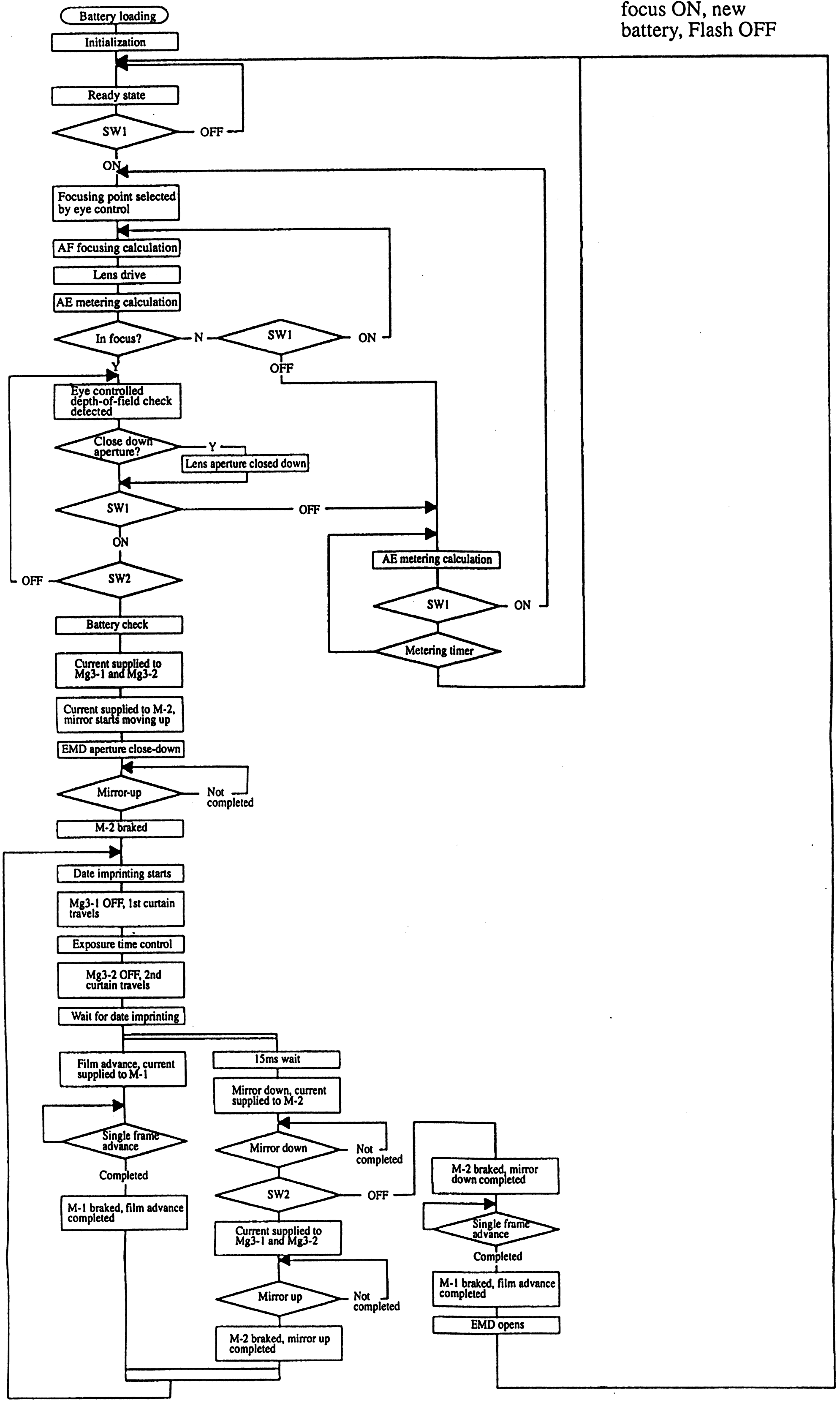
## 10. EEPROM (except A2)

This ROM stores the image data from the area sensor.

# SEQUENCE FLOW CHART

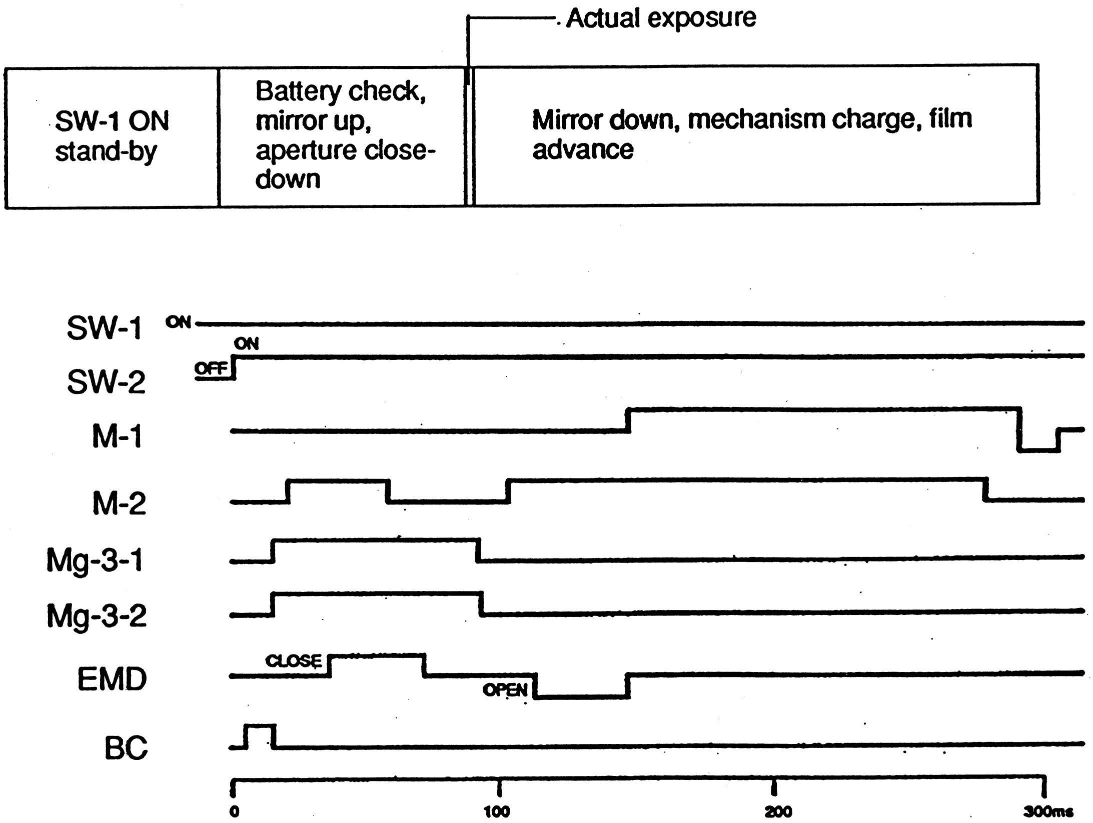
Sequence 1

EOS 820, creative
zone, one-shot AF,
Eye Controlled
focus ON, new
battery, Flash OFF

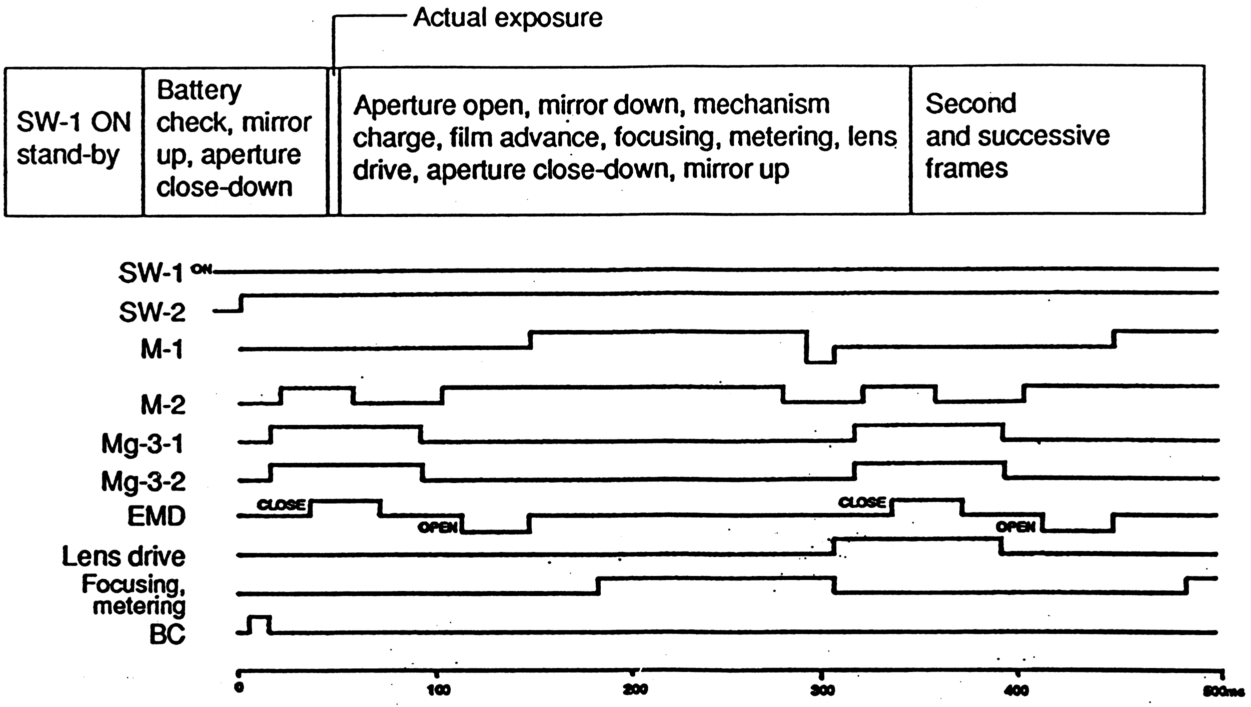

Battery loading
Initialization
Ready state
SW1
OFF
ON
Focusing point selected by eye control
AF focusing calculation
Lens drive
AE metering calculation
In focus?
N
SW1
ON
OFF
Y
Eye controlled depth-of-field check detected
Close down aperture?
Y
Lens aperture closed down
SW1
OFF
ON
AE metering calculation
SW1
ON
Metering timer
OFF
SW2
Battery check
Current supplied to Mg3-1 and Mg3-2
Current supplied to M-2, mirror starts moving up
EMD aperture close-down
Mirror-up
Not completed
M-2 braked
Date imprinting starts
Mg3-1 OFF, 1st curtain travels
Exposure time control
Mg3-2 OFF, 2nd curtain travels
Wait for date imprinting
Film advance, current supplied to M-1
Single frame advance
Completed
M-1 braked, film advance completed
15ms wait
Mirror down, current supplied to M-2
Mirror down
Not completed
SW2
OFF
Current supplied to Mg3-1 and Mg3-2
Mirror up
Not completed
M-2 braked, mirror up completed
M-2 braked, mirror down completed
Single frame advance
Completed
M-1 braked, film advance completed
EMD opens

# OPERATIONAL TIMING CHARTS

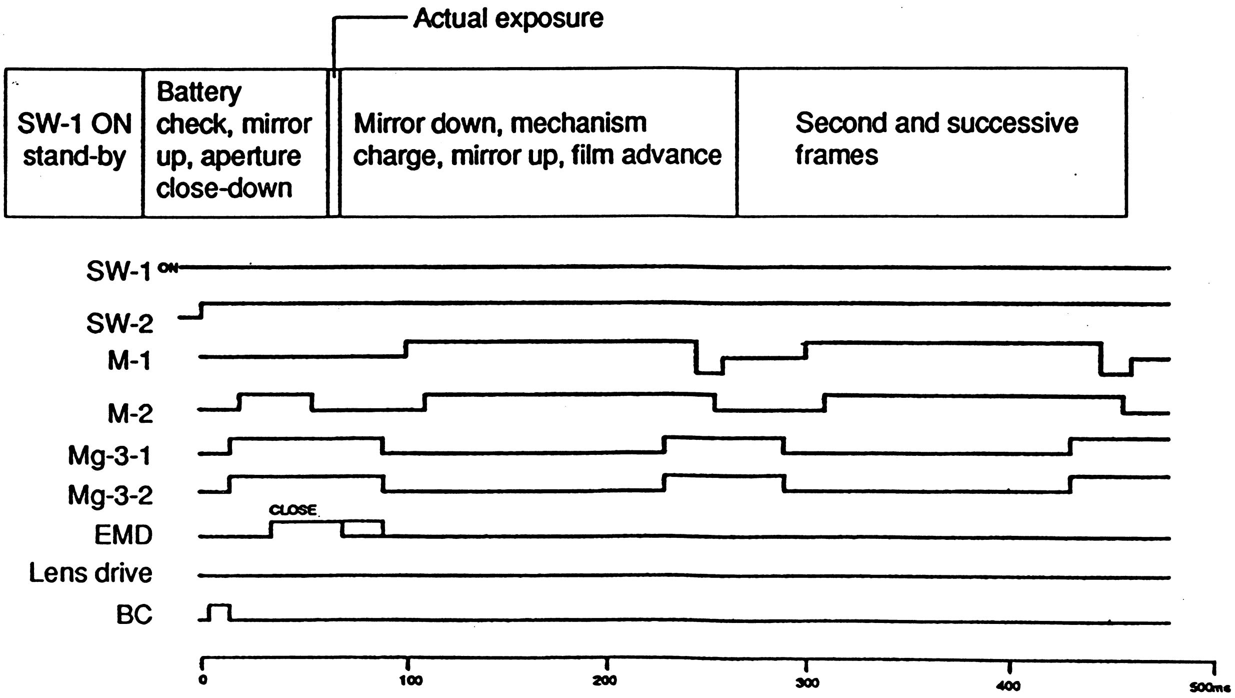
**Camera Operation Sequence After SW-2 ON (when in single-frame shooting mode with AF focusing completed and the camera in SW-1 ON stand-by mode)**


Actual exposure
SW-1 ON stand-by
Battery check, mirror up, aperture close-down
Mirror down, mechanism charge, film advance
SW-1
ON
SW-2
ON
OFF
M-1
M-2
Mg-3-1
Mg-3-2
EMD
CLOSE
OPEN
BC
0
100
200
300ms

## AI Servo AF Continuous Shooting Using Lens With AF/EMD Simultaneous Drive Capability (new battery)

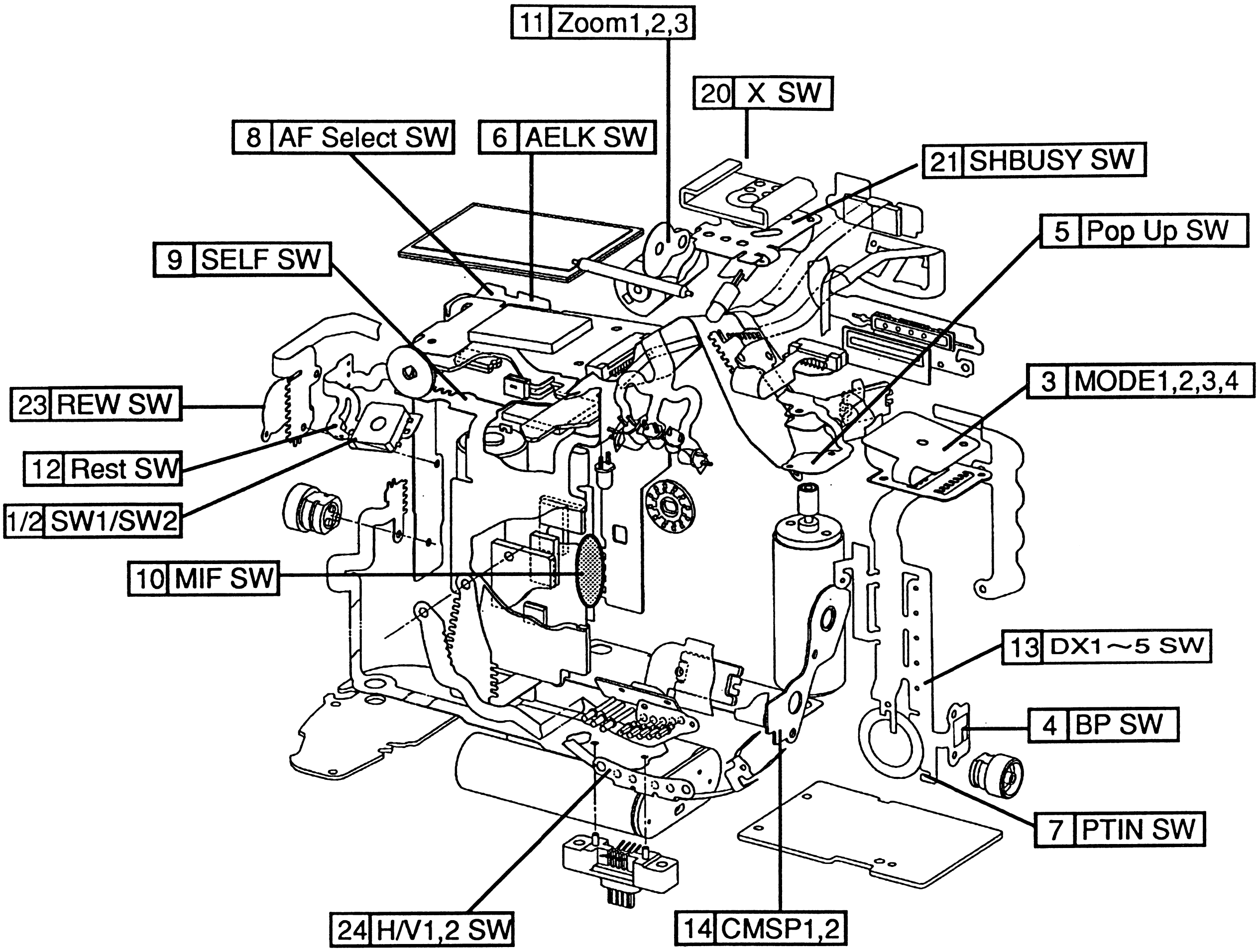

Actual exposure
SW-1 ON stand-by
Battery check, mirror up, aperture close-down
Aperture open, mirror down, mechanism charge, film advance, focusing, metering, lens drive, aperture close-down, mirror up
Second and successive frames
SW-1 ON
SW-2
M-1
M-2
Mg-3-1
Mg-3-2
EMD
CLOSE
OPEN
CLOSE
OPEN
Lens drive
Focusing, metering
BC
0
100
200
300
400
500ms

## Continuous Shooting in One-shot AF or Manual Focusing Mode (new battery)


Actual exposure
SW-1 ON stand-by
Battery check, mirror up, aperture close-down
Mirror down, mechanism charge, mirror up, film advance
Second and successive frames
SW-1 ON
SW-2
M-1
M-2
Mg-3-1
Mg-3-2
EMD
CLOSE
Lens drive
BC
0
100
200
300
400
500ms

# SWITCHES

## 1. Switch Layout


11 Zoom1,2,3
20 X SW
8 AF Select SW
6 AELK SW
21 SHBUSY SW
5 Pop Up SW
9 SELF SW
3 MODE1,2,3,4
23 REW SW
12 Rest SW
1/2 SW1/SW2
10 MIF SW
13 DX1～5 SW
4 BP SW
7 PTIN SW
24 H/V1,2 SW
14 CMSP1,2

**Switches not illustrated**

| |
|---|
| LMES SW<br>AF Mode SW<br>Drive Mode SW<br>Function SW<br>D-Lock SW<br>S-Dial SW |

## 2. Switch Table

*: External Operation Switch

| | No. | Symbol | Switch Name | Function |
|---|---|---|---|---|
| * | 1 | SW1 | Metering/Ranging | On, distance and exposure metering start |
| * | 2 | SW2 | Shutter Release | Initiats exposure sequence |
| * | 3 | MODE1,2,3,4 | Mode Select | Select photographic mode with Command Dial |
| | 4 | BP SW | Back Cover | Low (on) when back is open, high (open) when back is closed |
| * | 5 | POP UP SW | Flash up | Builot-in flash pops up when pushed |
| * | 6 | AELK SW | AE Lock | Locks in present exposure value |
| | 7 | PTIN SW | Cartridge sensor | Open when a film cartridge is installed |
| * | 8 | AF Select SW | AF Select | AF Focusing Point Selection Button is pressed to allow the focus point to be selected by turning the Main Dial. |
| * | 9 | SELF SW | Self-timer | When pressed, Self-timer mode is selected. Timer starts when SW2 closes |
| | 10 | MIF SW | Mount Interface | Lens sensor - On when a lens is attached |
| | 11 | ZOOM1-3 SW | Zoom Flash Position | Senses present position of built-in zoom flash |
| | 12 | Rest SW | Reset | Resets ICs when the battery is installed. |
| | 13 | DX1-5 SW | DX Code | Reads film speed portion of the DX code |
| | 14 | CMSP1,2 | Shutter Phase | Monitors positon of mirror and condition of shutter charge |
| * | 15 | S-Dial SW | Quick Command Dial | Set exposure (including flash) compensation, manual aperture |
| * | 16 | Drive Mode SW | Film Winding Mode | Sets film winding mode, single, continuous, or continuous high speed |
| * | 17 | LMES SW | Metering Mode | Select Evaluative, Spot, or Center-weighted Average metering |
| * | 18 | Function SW | Function | Press to select AEB, Red-eye Reduction, Multiple Exposure, or manual Film Speed Setting Mode. Set with main dial. |
| * | 19 | D-Lock SW | Dial Lock | Quick control dial lock - Disables Quick Control Lock |
| | 20 | X SW | X Sync | Flash trigger switch |
| | 21 | SHBUZY SW | External Flash | Senses when external flash is mounted |
| * | 22 | AF MODE SW | AF Mode | Press to enable AF mode selection. Set mode with main dial. |
| * | 23 | REW SW | Manual Rewind | Press to manually induce powered rewind |
| | 24 | H/V1,2 SW | H/V Orientation | Determines whether camera is being held horizontally or vertically and switches evaluative metering, and disables eye-controlled focus. |

## MEMO

# CIRCUIT DESCRIPTIONS

## Power Supply

Basically, there are three power sources, the battery itself, the DC/DC Convertor and voltages generated within the ICs.

1. Battery Power

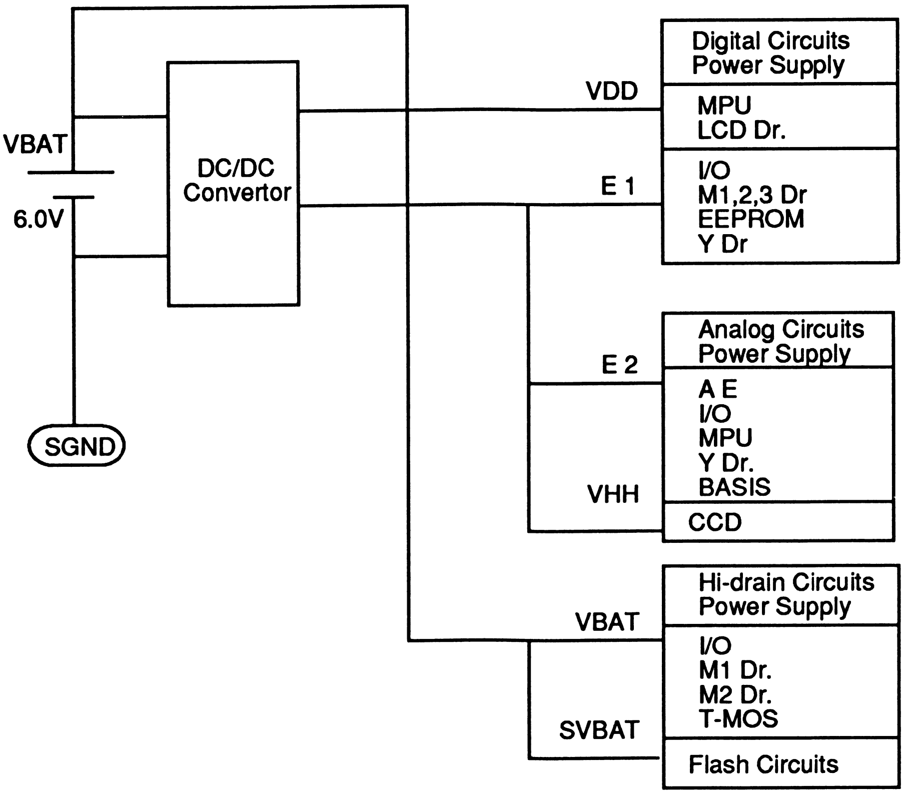
VBAT ..... power source for mechanical systems (nominally 6V)
SVBAT .... power source for electronic flash (nominally 6V)

2. DC/DC Convertor Power

E1 ..... IC drive power (5.3 ± 0.4V)
E2 ..... Analog system power (5.3 ± 0.4V)
VDD .... Digital system power (5.3 ± 0.4V)

3. IC Power

VC ..... Camera reference voltage (1.22V)
VRH .... A/D conversion reference voltage (3.2V)


VBAT
6.0V
SGND
DC/DC Convertor
VDD
E 1
E 2
VHH
VBAT
SVBAT
Digital Circuits Power Supply
MPU
LCD Dr.
I/O
M1,2,3 Dr
EEPROM
Y Dr
Analog Circuits Power Supply
A E
I/O
MPU
Y Dr.
BASIS
CCD
Hi-drain Circuits Power Supply
I/O
M1 Dr.
M2 Dr.
T-MOS
Flash Circuits

# Power Input

(1) When a battery is loaded into the camera, VBAT and VDD are supplied to each IC.

(2) After several hundred milliseconds, PUC of LCD Dr. changes from L to H, and LCD Dr. starts to initialize.

(3) Pin 13 (/E1ON) of LCD Dr. goes L. The DC/DC Convertor starts generating E1, E2, and VHH, which are supplied to each IC.

(4) I/O monitors the VBAT voltage, changing /RESIO from L to H when the E1 voltages exceeds 4.5V, and sends it to the LCD Dr., which then changes /RESMPU from L to H sending it to the MPU energizing it.

(5) The MPU communicates with I/O, and switches over IOAD output to check the battery.

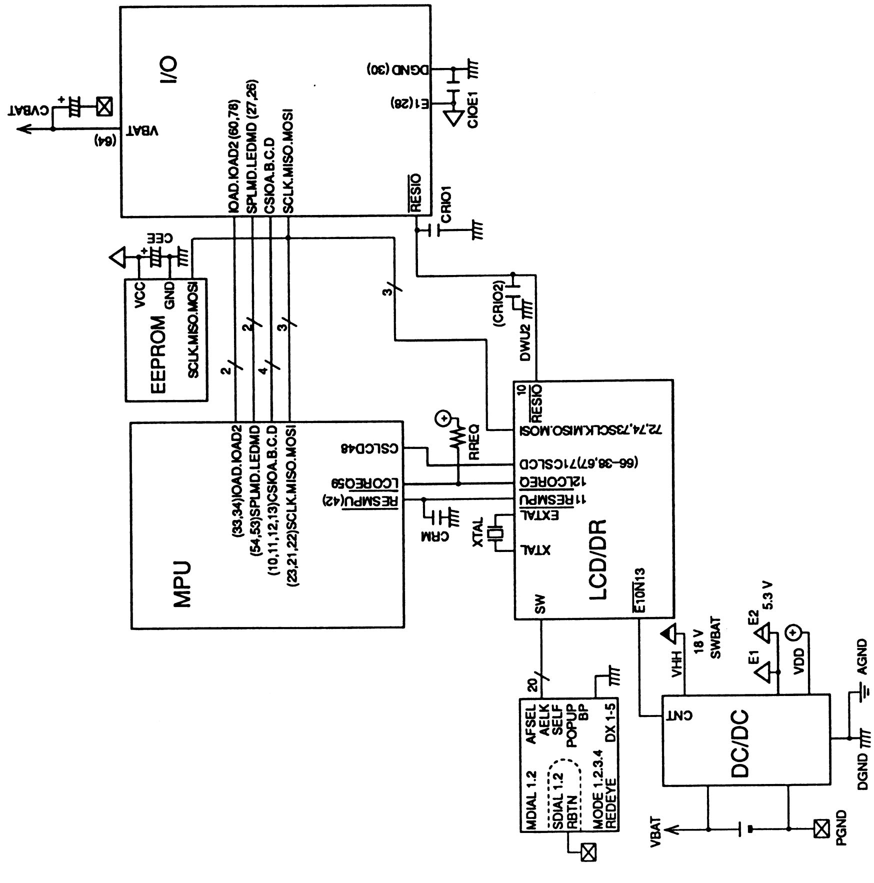
(6) The MPU applies the voltage to the DC/DC Convertor load resistor, and VBAT is input to the VBAT terminal of the I/O.

(7) The MPU converts the analog voltage to a digital signal and checks if it is above or below 4.2V, the inhibit voltage. If below, the battery mark blinks. If above 4.2V the sequence continues.

(8) The MPU then sets CSLCD to L, selects the LCD Dr. and checks switch input condition using the SCLK, MOSI and MISO lines.

(9) If there are no changes in switch positions, the MPU orders the LCD Dr. to turn off the DC/DC Convertor.

(10) The LCD Dr. changes /E1ON from L to H and turns off the DC/DC Convertor.



I/O
CVBAT
VBAT (64)
DGND(30)
E1(28)
CIOE1
IOAD.IOAD2(60,78)
SPLMD.LEDMD(27,26)
CSIOA.B.C.D
SCLK.MISO.MOSI
RESIO
CRIO1
CEE
EEPROM
VCC
GND
SCLK.MISO.MOSI
2
4
3
3
(CRIO2)
DWU2
MPU
(33,34)IOAD.IOAD2
(54,53)SPLMD.LEDMD
(10,11,12,13)CSIOA.B.C.D
(23,21,22)SCLK.MISO.MOSI
CSLCD48
LCDREQ59
RESMPU(42)
CRM
RREQ
XTAL
10 RESIO
72,74,73SCLK.MISO.MOSI
(66~38,67)71CSLCD
12LCDREQ
11RESMPU
EXTAL
XTAL
LCD/DR
SW
E1ON13
20
MDIAL 1.2
SDIAL 1.2
RBTN
MODE 1.2.3.4
REDEYE
AFSEL
AELK
SELF
POPUP
BP
DX 1-5
VHH
18 V
SWBAT
E1
E2
5.3 V
VDD
AGND
CNT
DC/DC
DGND
VBAT
PGND

# Autoloading

(1) When a film is loaded and the back cover closed, both PTIN SW (the cartridge switch) and BACK SW (the back cover switch) are turned off (H).

(2) The condition of the mirror box mechanisms and the flash zoom position are checked.

(3) A weak current is applied to the DX contacts to read the film sensitivity (ISO).

(4) Current is applied to DC/DC Convertor to check the battery.

(5) M1R goes from H to L and M1F is L. This starts M1 motor rotation in the normal direction to start film winding.

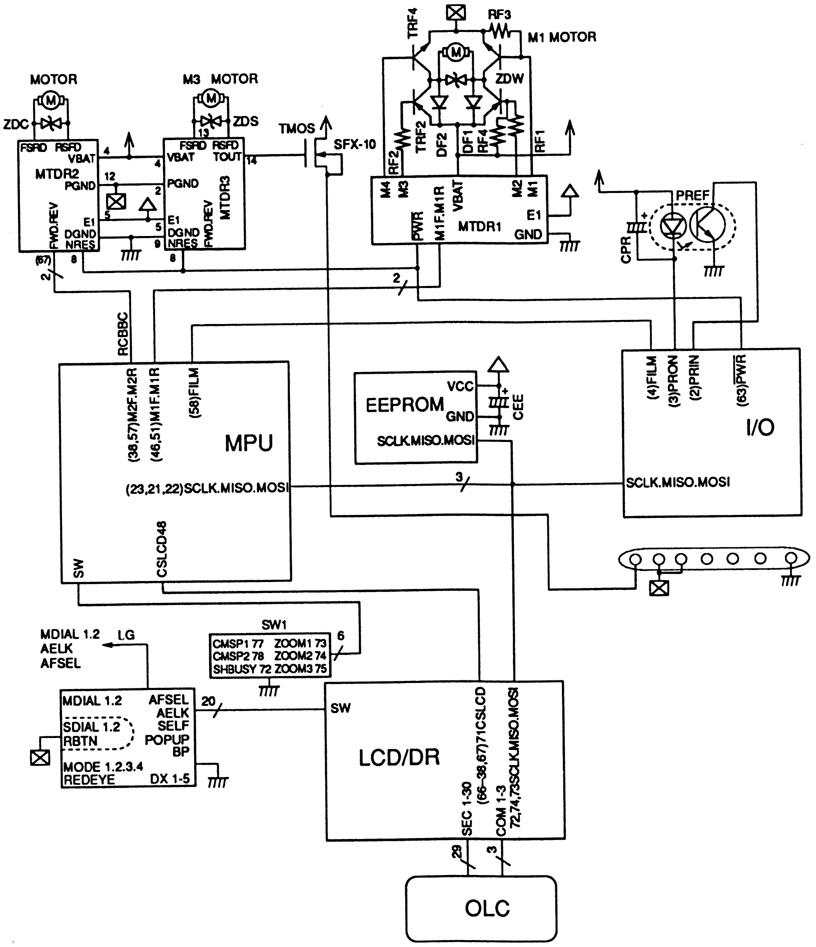
(6) I/O sets PRON to L lighting the perforation sensing photointeruptor LED.

(7) When a perforation passes between the photointeruptor LED and phototransistor, the transistor is turned on imputing a signal to the I/O AT PRIN. The signal train is output from FILM to the MPU.

(8) The MPU counts these pulses to determine the amount of film passing through the photointeruptor.

(9) When the pulse count reaches the predetermined number (about three frames), the motor is stopped.

(10) The MPU causes the frame number “1" to be displayed on the top deck LCD (OLC).



MOTOR
ZDC
FSRD RSFD
VBAT
MTDR2
PGND
FWD.REV
E1
DGND
NRES
(67)
M3 MOTOR
ZDS
MTDR3
TOUT
TMOS
SFX-10
TRF4
RF3
M1 MOTOR
ZDW
RF2
TRF2
DF2
DF1
RF4
RF1
M4
M3
M1F.M1R
VBAT
M2
M1
PWR
MTDR1
E1
GND
PREF
CPR
RCBBC
(38,57)M2F.M2R
(46,51)M1F.M1R
(58)FILM
MPU
(23,21,22)SCLK.MISO.MOSI
SW
CSLCD48
EEPROM
VCC
GND
SCLK.MISO.MOSI
CEE
(4)FILM
(3)PRON
(2)PRIN
(63)PWR
I/O
SCLK.MISO.MOSI
MDIAL 1.2
AELK
AFSEL
LG
SW1
CMSP1 77
CMSP2 78
SHBUSY 72
ZOOM1 73
ZOOM2 74
ZOOM3 75
MDIAL 1.2
SDIAL 1.2
RBTN
MODE 1.2.3.4
REDEYE
AFSEL
AELK
SELF
POPUP
BP
DX 1-5
SW
LCD/DR
SEC 1-30
(66–38,67)71CSLCD
COM 1-3
72,74,73SCLK.MISO.MOSI
OLC

# SW 1 On (AE Operation)

(1) When the shutter button is pressed to the first detent, SW 1 is turned on and this fact is input to the LCD Dr.

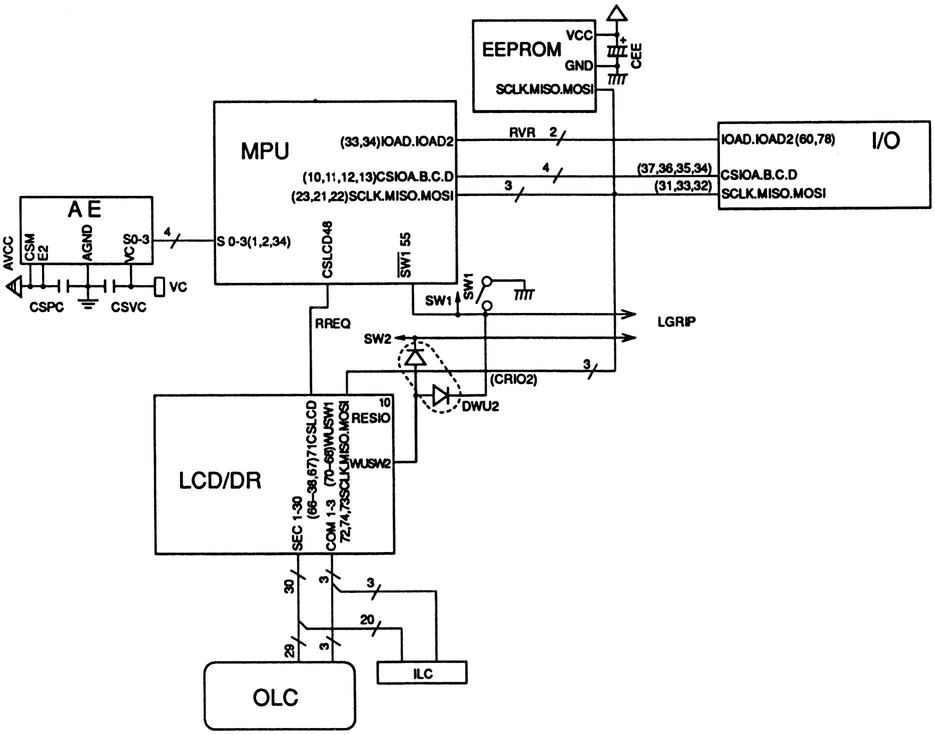
(2) The MPU selects metering areas with combinations of S0 - S3, conducts calculations internally, and determines the required exposure.

(3) For display on the LCDs, CSLCD goes H and the LCD Dr. is selected.

(4) The photometric (exposure) data is sent to the LCD Dr. on MOSI.

(5) The calculated shutter speed and aperture are displayed on the LCDs (top deck OLC and viewfinder ILC)*.

*: OLC = Outside LCD , ILC = Inside LCD (Design department designations).


EEPROM
VCC
GND
SCLK.MISO.MOSI
CEE
MPU
(33,34)IOAD.IOAD2
(10,11,12,13)CSIOA.B.C.D
(23,21,22)SCLK.MISO.MOSI
RVR
2
4
3
I/O
IOAD.IOAD2(60,78)
(37,36,35,34)
CSIOA.B.C.D
(31,33,32)
SCLK.MISO.MOSI
AE
AVCC
CSM
E2
AGND
VC
S0-3
S 0-3(1,2,34)
CSLCD48
SW1 55
VC
CSPC
CSVC
SW1
SW1
LGRIP
RREQ
SW2
(CRIO2)
DWU2
LCD/DR
10
RESIO
WUSW2
(66-38,67)71CSLCD
(70-68)WUSW1
72,74,73SCLK.MISO.MOSI
SEC 1-30
COM 1-3
30
3
3
20
29
3
OLC
ILC

# SW 1 On (AF Operation)

(1) When the shutter button is pressed, SW 1 is turned on this is input to the LCD Dr.

(2) The DC/DC Convertor is turned on.

(3) The IOAD output from I/O is changed to distance measurement by CSIO A, B, C and MOSI.

(4) The MPU changes /TINT to H, which is the distance measurement possible status, and orders start of measurement through MOSI.

(5) The MPU outputs the BASIS clock pulse signal BAS 0, 1, 2.

(6) I/O creates the BASIS drive signals PB1 - 6, based on the clock pulse.

(7) The BASIS sensor is driven by PB 1 - 6 and outputs distance related video.

(8) The I/O sends this data to the MPU through IOAD.

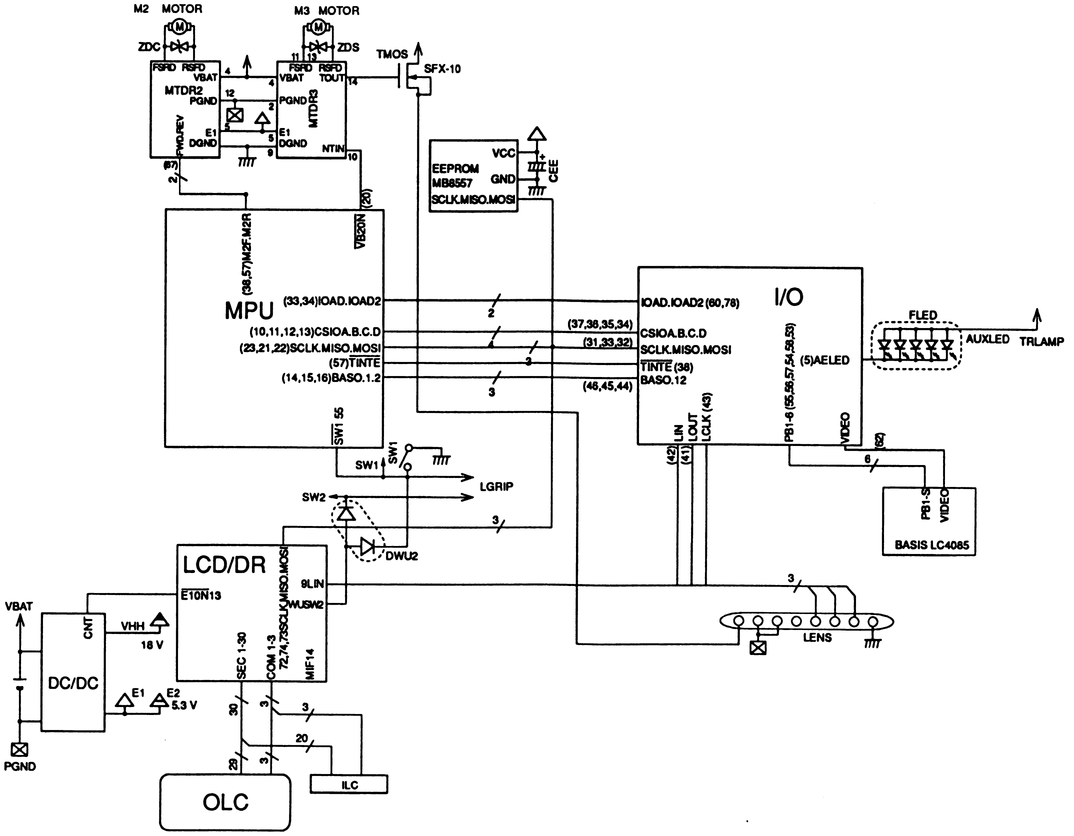
(9) The MPU selects the sensor to be used based on contrast and data reliability.

(10) The selected sensor's signal is A/D converted, and the defocus amount is calculated.

(11) The MPU changes /VBON to L, turning on the TMOS applying VBAT to the lens.

(12) The I/O communicates with the lens through LCLK, LIN and LOUT to focus the lens the required amount.

(13) When in focus, the I/O applies a L to the AELED line to light the in-focus LED and selects the correct SPLED to light the selected AF frame.


M2 MOTOR
M3 MOTOR
ZDC
ZDS
FSRD RSFD
VBAT
MTDR2
PGND
FWD.REV
E1
DGND
(67)
MTDR3
TOUT
NTIN
TMOS
SFX-10
EEPROM
MB8557
VCC
GND
SCLK.MISO.MOSI
CEE
(38,57)M2F.M2R
(20)
VB20N
MPU
(33,34)IOAD.IOAD2
(10,11,12,13)CSIOA.B.C.D
(23,21,22)SCLK.MISO.MOSI
(57)TINTE
(14,15,16)BASO.1.2
SW1 55
SW1
SW2
LGRIP
DWU2
I/O
IOAD.IOAD2 (60,78)
(37,38,35,34)
CSIOA.B.C.D
(31,33,32)
SCLK.MISO.MOSI
TINTE (38)
BASO.12
(46,45,44)
LIN
LOUT
LCLK (43)
(42)
(41)
PB1-6 (55,56,57,54,58,53)
(5)AELED
VIDEO
(62)
FLED
AUXLED
TRLAMP
PB1-S
BASIS LC4085
LENS
LCD/DR
E10N13
9LIN
WUSW2
72,74,73SCLK.MISO.MOSI
SEC 1-30
COM 1-3
MIF14
VBAT
CNT
VHH
18 V
DC/DC
E1
E2
5.3 V
PGND
OLC
ILC

# SW 2 On (Release, Exposure)

When the shutter button is pressed all the way, turning on SW2, this information is input through the LCD Dr. to the MPU.

(2) The MPU turns both LCDs off.

(3) Current is supplied to the DC/DC Convertor to check the battery.

(4) The MPU sets M2F to H and M2R to L to turn M2 in the normal direction to drive the mirror up. At the same time, Mg3-1 and 3-2 coils are energized to hold the shutter curtains.

(5) The I/O communicates with the lens through LCLK, LIN, and LOUT , and when the diaphragm is fully open, it closes it to the specified aperture. If the operation is a failure, the battery mark flashes.

(6) When the mirror starts up, the condition of the shutter phase switch changes. When CMSP1 and CMSP2 change from H to L, it is determined that the mirror is all the way up and power to the M2 motor is turned off.

(7) The MPU removes power from Mg3-1 and the first curtain runs.

(8) After the correct exposure time, previously determined, has elapsed power is removed form Mg3-2 and the second curtain runs, closing the shutter and turning on CN2.

(9) Six milliseconds after CN2 goes on the mirror down/shutter charge operation starts. M2 motor continues to rotate in the normal direction.

(10) As the mirror comes down, the condition of the shutter phase switch changes. When CMSP1 and CMSP2 change from H to L, it is determined that the mirror is all the way down and power to the M2 motor is turned off.

(11) The I/O communicates with the lens and the diaphragm is opened.

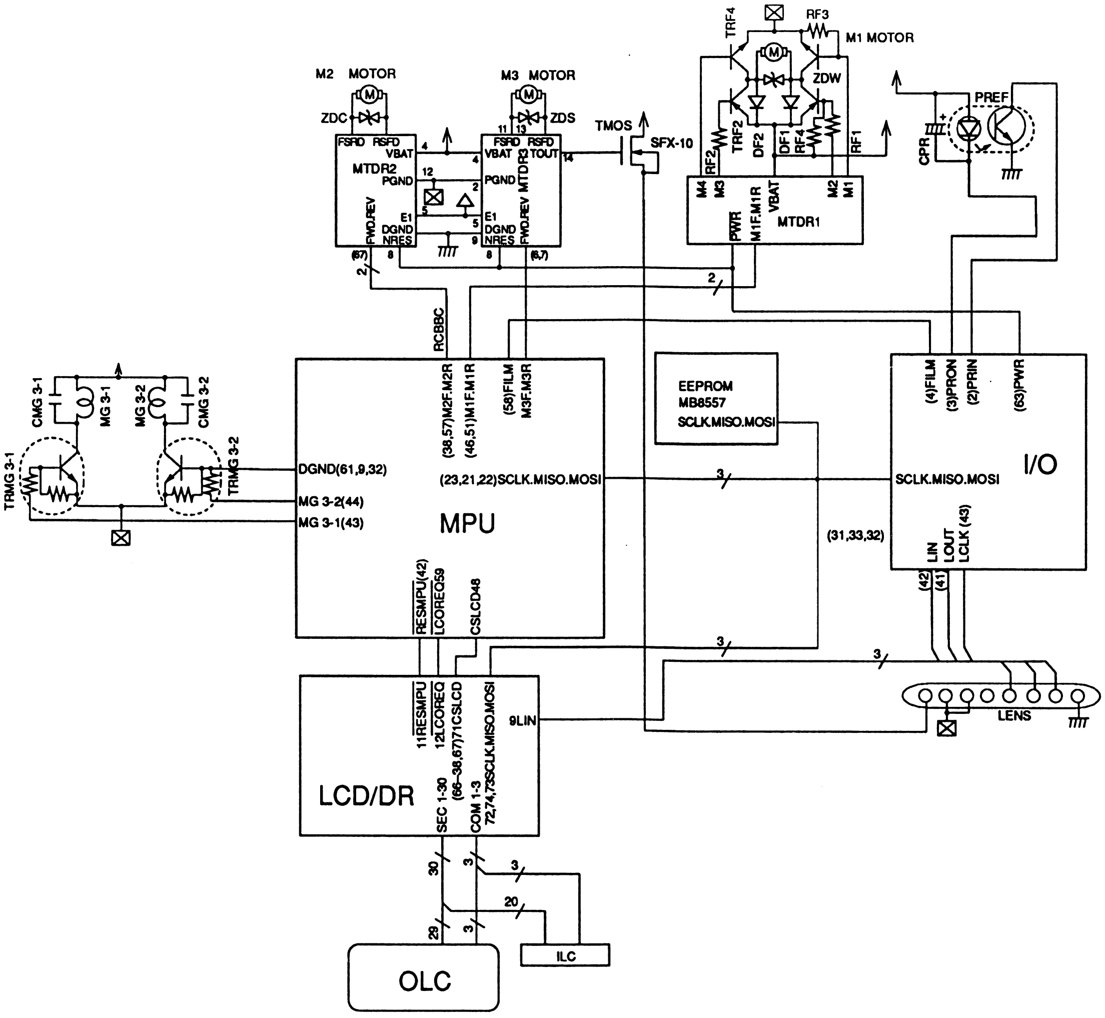
(12) After the diaphragm is open, the MPU changes M1F to H and M1R to L, turning the M1 motor in the normal direction to wind one frame of film.

(13) The I/O sets PRON to L lighting the perforation sensing photointeruptor LED.

(14) When a perforation passes between the photointeruptor LED and phototransistor, the transistor is turned on imputing a signal to the I/O AT PRIN. The signal train is output from FILM to the MPU.

(15) When the pulse count reaches the predetermined number (8), the motor is stopped.

(16) The MPU causes the frame number “2" to be displayed on the top deck LCD (OLC).


M2 MOTOR
ZDC
FSRD RSFD
VBAT
MTDR2
PGND
FWD.REV
E1
DGND
NRES
M3 MOTOR
ZDS
MTDR3
TOUT
TMOS
SFX-10
TRF4
RF3
M1 MOTOR
ZDW
RF2
TRF2
DF2
DF1
RF4
RF1
M4
M3
PWR
M1F.M1R
VBAT
M2
M1
MTDR1
CPR
PREF
RCBBC
(38,57)M2F.M2R
(46,51)M1F.M1R
(58)FILM
M3F.M3R
CMG 3-1
MG 3-1
MG 3-2
CMG 3-2
TRMG 3-1
TRMG 3-2
DGND(61,9,32)
MG 3-2(44)
MG 3-1(43)
(23,21,22)SCLK.MISO.MOSI
MPU
RESMPU(42)
LCOREQ59
CSLCD48
EEPROM
MB8557
SCLK.MISO.MOSI
(4)FILM
(3)PRON
(2)PRIN
(63)PWR
SCLK.MISO.MOSI
I/O
(31,33,32)
LIN
LOUT
LCLK (43)
(42)
(41)
LENS
11RESMPU
12LCOREQ
(66~38,67)71CSLCD
72,74,73SCLK.MISO.MOSI
9LIN
SEC 1-30
COM 1-3
LCD/DR
30
3
3
20
29
3
OLC
ILC

# Film Rewind

There are three different conditions under which film is rewound.

(A) When the rewind button is pressed.

(B) After the 36th exposure.

(C) When film tension increases at the end of a roll.

– Sequence –

(1) When one of the events which initiate film rewind occurs, the fact is input to the MPU.

(2) Current is applied to DC/DC Convertor to check the battery.

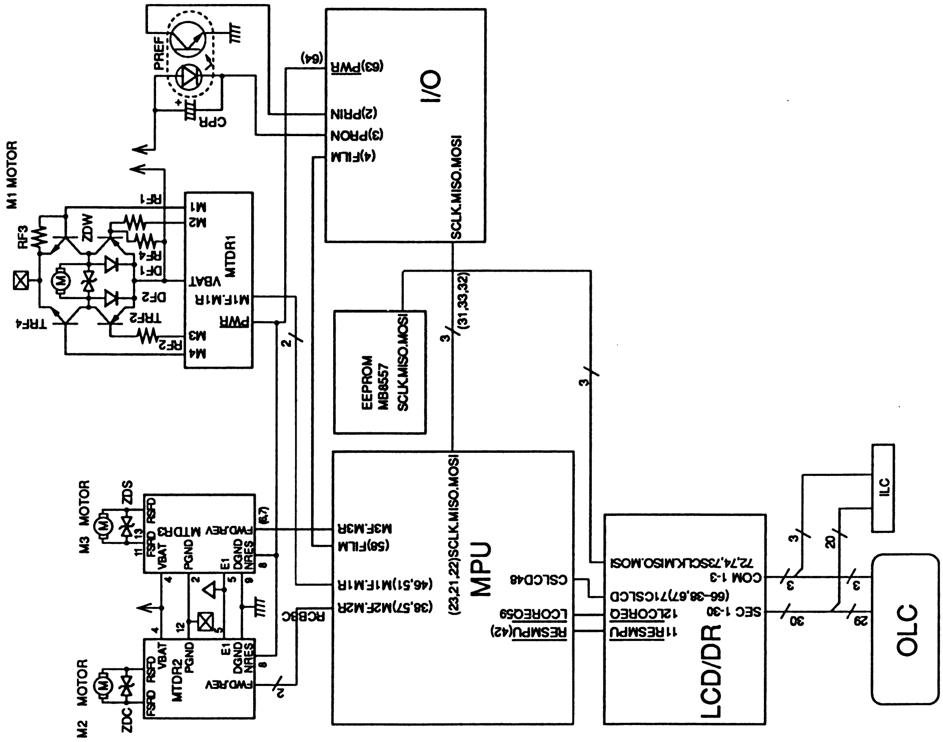
(3) The MPU changes M1F to L and M1R is H. This starts M1 motor rotation in the reverse direction to start film rewinding.

(6) The I/O sets PRON to L lighting the perforation sensing photointeruptor LED.

(7) When a perforation passes between the photointeruptor LED and phototransistor, the transistor is turned on imputing a signal to the I/O AT PRIN. The signal train is output from FILM to the MPU.

(8) As the MPU counts these pulses to determine the amount of film passing through the photointeruptor, it reduces the frame number on the LCD by one for each 8 pulses (perforations).

(9) When the film has rewound the correct amount, depending of the setting of custom function CF2, the motor stops and the cartridge mark on the top deck LCD (OLC) blinks.



I/O
(63)PWR
(64)
(2)PRIN
(3)PRON
(4)FILM
SCLK.MISO.MOSI
PREF
CPR
M1 MOTOR
RF3
ZDW
RF1
DF1
DF2
TRF2
TRF4
RF2
MTDR1
M1
M2
M3
M4
VBAT
M1F.M1R
PWR
EEPROM
MB8557
SCLK.MISO.MOSI
(31,33,32)
MPU
(23,21,22)SCLK.MISO.MOSI
(58)FILM
M3F.M3R
(46,51)M1F.M1R
(38,57)M2F.M2R
CSLCD48
LCORE59
RESMPU(42)
RCBSC
M3 MOTOR
ZDS
MTDR3
MTDR2
M2 MOTOR
ZDC
VBAT
PGND
DGND
NRES
FWD/REV
LCD/DR
72,74,SCLK.MISO.MOSI
COM 1-3
(66-68,67)CSLCD
LCORE
SEC 1-30
RESMPU
ILC
OLC

# Built-in Flash Operation

(Shooting Mode: an Image Zone Position)

## Built-it Flash Firing Conditions (not A2/A2E)

(A) Low light, below BV5 on central sensor.
(B) Backlight: When the brightest sensor is more than two BV brighter than the central sensor.

## Flash Pop-up Conditions

### (A) EOS 5, 5QD

a. When the command dial is in the Creative Zone and the flash button is pressed.
b. When the command dial is in the Image Zone and the proper conditions are present.

### (B) EOS A2, A2E

a. When the command dial is in the Creative Zone and the flash button is pressed.
b. When the command dial is in the Image Zone and the proper conditions are present, the flash mark will blink. The flash will pop up when the flash button is pressed.

### — Sequence —

(1) The flash necessary/flash up conditions are input to the MPU.

(2) The MPU sets M2F to L and M2R to H, rotating motor M2 in the reverse direction. This extends (pops up) the flash.

(3) The I/O communicates with the lens to check the currently set focal length and inputs the information to the MPU.

(4) The I/O again operates the M2 motor in reverse to set the zoom flash to the correct setting for the lens focal length.

(5) The I/O sets OSC to H, starting charging of the duplexed main flash capacitors (C11, C12) and the trigger capacitor (C4).

(6) When fully charges a reference voltage from voltage divider R1-R2 (about 2.5V) is input by SENSE to stop the charging.

(7) When the shutter is released and the X contact goes on at the end of first curtain travel, the SYNC signal to I/O is grounded.

(8) This causes /STCR of I/O to go low, turning on SCR1 triggering the flash.

(9) When the proper exposure is detected by ANODL-R (autoflash sensor) of I/O, /SPCR goes L, triggering SCR2 dumping the remaining charge.

(10) After the flash stops, preliminary charging occurs until the DC/DC Convertor turns off.

## AF Auxiliary Light

(11) When the MPU determines the ambient light or the subject contrast to be too low, it instructs I/O to turn on the AF Auxiliary Light.

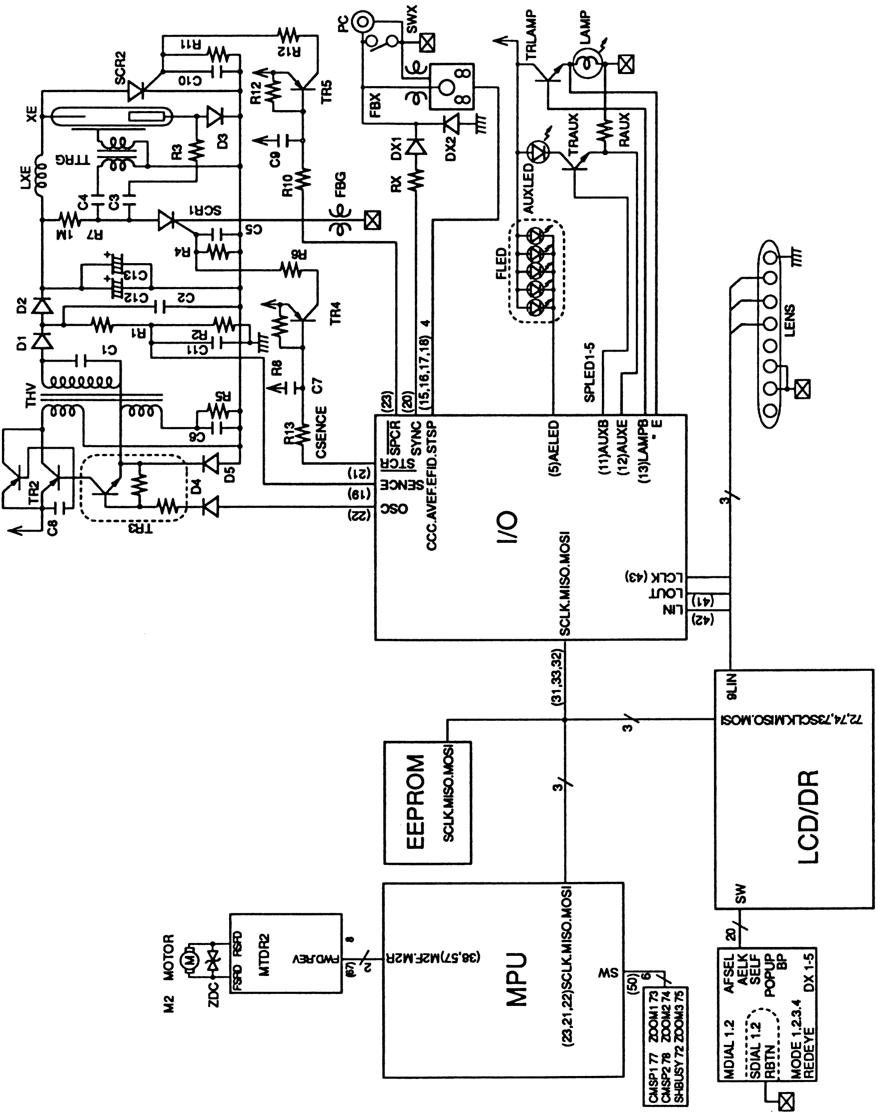
(12) I/O set AUX to H and turns TRAUX on to cause the light it light.

(13) Since lighting is limited to four cycles per SW1 on, the shutter button must be releases and pressed again if proper focus is not obtained.

## Red-eye Reduction Lamp Lighting

(14) When the Red-eye Reduction mode has been selected and the flash is extended, red-eye reduction mode is set, and the red-eye mark is displayed on the top deck LCD (OLC).

(15) In the one-shot AF mode, the red-eye lamp lights after focus is completed and goes of when the shutter is released, or Sw1 goes off.


XE
SCR2
R11
R12
C10
TR5
D3
R3
TTRG
LXE
C4
C3
SCR1
R7 1M
C9
R10
FBG
C5
R4
R6
C13
C12
C2
D2
D1
R1
R2
C1
C11
TR4
R8
C7
THV
R5
C6
R13
CSENCE
TR1
TR2
TR3
C8
D4
D5
PC
SWX
FBX
DX1
DX2
RX
TRLAMP
LAMP
AUXLED
TRAUX
RAUX
FLED
SPLED1-5
LENS
I/O
(23) SPCR
(20) SYNC
(15,16,17,18) CCC.AVEF.EFID.STSP
4
(21) STCR
(19) SENCE
(22) OSC
(5)AELED
(11)AUXB
(12)AUXE
(13)LAMPB
E
SCLK.MISO.MOSI
LCLK (43)
LOUT (41)
LIN (42)
3
(31,33,32)
EEPROM
SCLK.MISO.MOSI
9LIN
72,74,73SCLK.MISO.MOSI
LCD/DR
SW
20
MPU
(23,21,22)SCLK.MISO.MOSI
(38,57)M2F.M2R
(87) 2
MS
(50) 6
CMSP1 77 ZOOM1 73
CMSP2 78 ZOOM2 74
SHBUSY 72 ZOOM3 75
MDIAL 1,2
SDIAL 1,2
RBTN
MODE 1,2,3,4
REDEYE
AFSEL
AELK
SELF
POPUP
BP
DX 1-5
FWD/REV
8
MTDR2
FSFD
M2 MOTOR
ZDC

# PART 3. REPAIR INFORMATION

# PREPARATIONS for REPAIR

## IMPORTANT! READ INSTRUCTIONS BEFORE STARTING REPAIR!

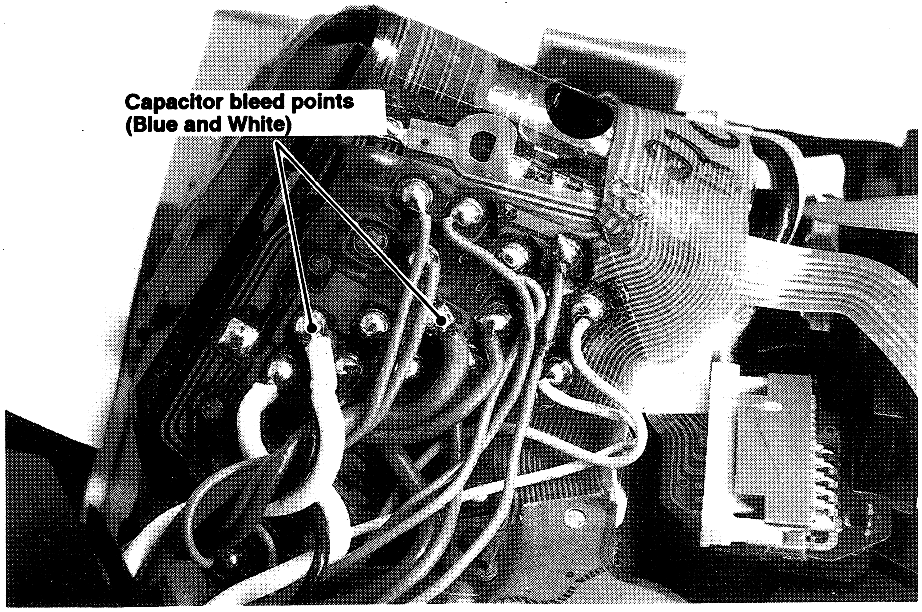
### 1. General Assembly and Disassembly Notes

1. Scratches and dust are very destructive to the eye-controlled focus function. When checking the camera or reassembling, be sure to clean the eye-controlled focus unit.
2. When replacing the mirror box, be sure to use the new lubricant, **Logenest Lambda A-74**. If H-26, which is used in earlier EOS cameras is used, and the camera is used in very cold climates (-20°C), improper operation is likely.
3. For operational checks during repair, a dummy ST flex must be used or the camera will not operate properly.
4. The flash must be popped up before the apron can be removed. If the camera has electrical or flash gear problems, see the External Covers Removal section for procedures.
5. See the Wiring Layout at the back of the book for correct wiring and lead dress.

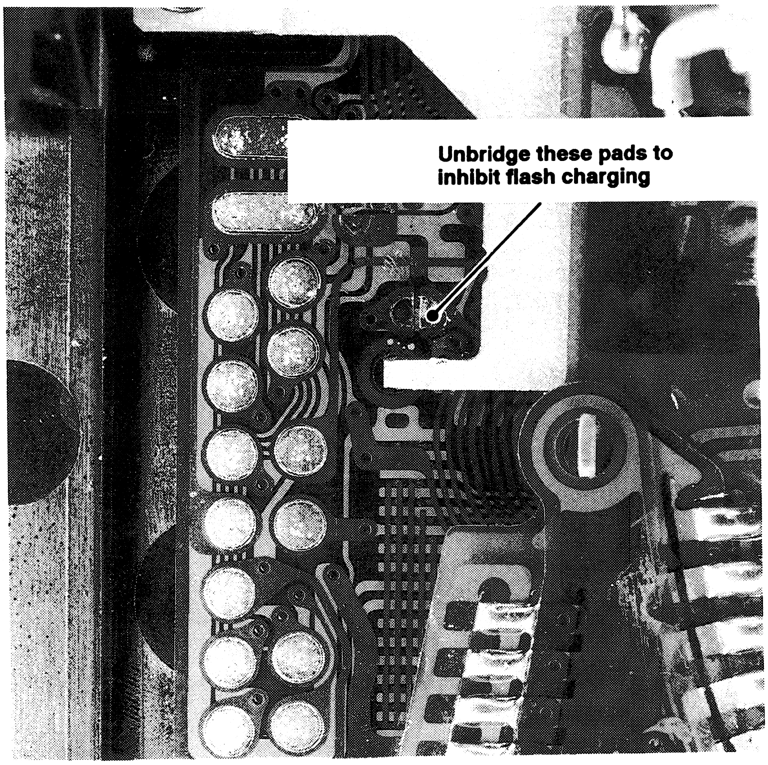
### 2. WARNING! HIGH VOLTAGE! Discharge the Main Capacitor

Whenever the top or bottom cover is removed, discharge the main capacitor at the points shown below. The built-in flash is almost always at least partially charged. After removing the battery and the top cover, drain any remaining charge with a low resistance, high wattage resistor across the points shown. Further charging during repair can be inhibited by removing the solder bridge from the flash inhibit pads.

### A. Flash Bleed Points (Near pentaprism hump, under top cover)



## B. Flash Inhibit Pads (Under Apron on grip side)



**Unbridge these pads to inhibit flash charging**

## 3 Operating Currents

Operating currents, both design standards, and actual test results are listed.

### Test Conditions:

| | |
|---|---|
| Lens: | EF 50mm f/1.8 |
| Power Supply: | Regulated Power Supply (5.4V) w/0.7Ω or New 2CR5 Battery (less than three months old). |
| Film : | New 36exp. TRI-X for winding and rewinding checks) |
| Eye-controlled Focus function | Turned off |

### Current Table:

| **Condition:** | **Design Specifications** | **Measured Averages** |
|---|---|---|
| Standby (Command Dial = L) | < 30μA | 16 ~ 19μA |
| SW1 On | < 300mA | 140 ~ 150mA |
| Winding (except initial 100ms) | < 1500mA | 1160 ~ 1280mA |
| Rewind (Normal Mode, 3 sec. after start) | < 800mA | 660 ~ 700mA |

# TOOLS AND EXPENDABLES LIST

## Tools & Test Equipment

### Notice:

**The new lubricant, Logenest Lambda A-74 must be used to insure proper mirror operation. Other types of Logenest Lambda are not acceptable.**

| New | TEST EQUIPMENT | Part No. | Adjustments |
|---|---|---|---|
| | Hot Shoe Interface Unit (HS-I/F) | CY9-7082-000 | Electrical Adjustments |
| | Multi-camera Tester EF 8000AC, or | CY9-7073-000 | AE, Light Metering IC |
| | Multi-camera Tester EF 500AC | CY9-7020-000 | and FA adjustment |
| | General purpose 90° Collimator-3 | CY9-7077-000 | 41.5 ° Sub-mirror adjustment |
| | Sub-mirror gage (41.5°) | CY9-7077-004 | ditto |
| | Regulated D.C. Power Supply | CY9-7073-000 | Electrical Adjustments |
| * | Eye Relief Compensation Tool Set | CY9-7086-000 | Eye-controlled focus Adjustment |
| * | Tool Battery Set | CY9-7079-000 | Eye-controlled focus Adjustment |
| | Optical Flat | CY9-1001-003 | Flange Focal Distance (FFD) Adj. |
| | Dial Gage | CY9-1001-006 | FFD Adjustment |
| | 2mm Aux. Ring | CY9-1001-008 | FFD Adjustment |
| | Block Gage (44.14mm) | CY9-1001-007 | FFD Adjustment |
| * | Eyepiece Mask | CY9-1097-000 | Eye-controlled focus Adjustment |
| | EF50/1.8 (Type I) Lens | Product | Operation |
| | 18% Gray Chart | Local Purchase | TTL-OTF Adjustment |
| | CCD Adj. Gray Card (19%) | CY9-7088-000 | ECF CCD Adj.ment |
| | AF Chart Paper 2% (A4) | CY9-1066-000 | AF Adjustments |
| | AF Chart Paper 64% (A4) | CY9-1067-000 | AF Adjustments |
| | AF Chart Paper 90% (A4) | CY9-7076-000 | AF Adjustments |

## Expendables

| New | Name | Part No. | Application |
|---|---|---|---|
| | Bond G103 | CY9-8002-000 | Mirror box light shield, Hot shoe spring and screws |
| | Aron Alpha 201 | CY9-8007-000 | IC-1 bonding |
| | PL015JG | CY9-8073-000 | Film Guide Roller, Winding Unit |
| | ED-16 | CY9-8075-000 | Back cover latch |
| | H26 | CY9-8079-000 | Dial shafts, Release button shaft, Gear spindles, etc. |
| | IF-10 | CY9-8088-000 | Mount spring |
| | Silicone Bond KE347B | CY9-8064-000 | Pentaprism sealing |
| | Double-faced Tape (No. 315) | CY9-9205-000 | Main Flex attachment |
| | Arontite L | CY9-8008-000 | Flash mounting screws |
| * | Logenest Lambda A-74 | CY9-8102-000 | Mirror box gear train |

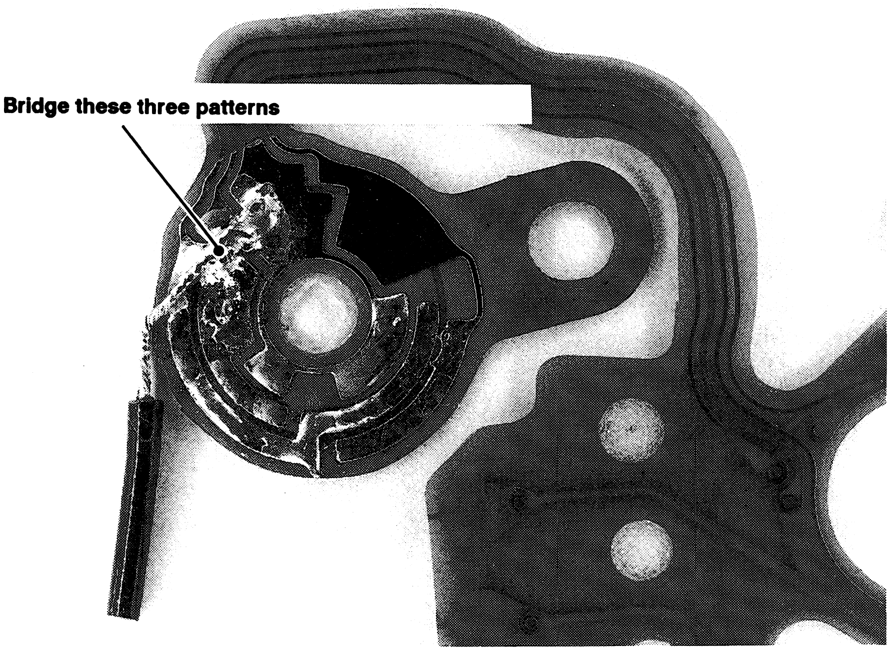
# Locally Fabricated Tools

The following locally made kludges are necessary for efficient service of the camera. Make them from service parts, preferably defective ones.

1. ST Flex Kludge (Necessary for running checks without the Top Cover)

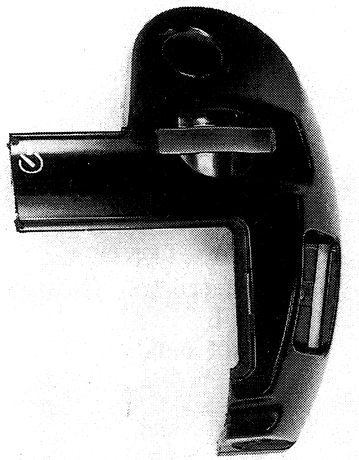
   1) In the camera program sequence, when the battery is installed the built-in flash zoom position is checked. If it is not positioned properly power is applied to the motor to drive it to the initial position. If the Top Cover is not installed, the position cannot be checked, so the battery mark flashes and a system error occurs. This kludge prevents this from happening.

   2) To make this tool, bridge the three patterns shown below.



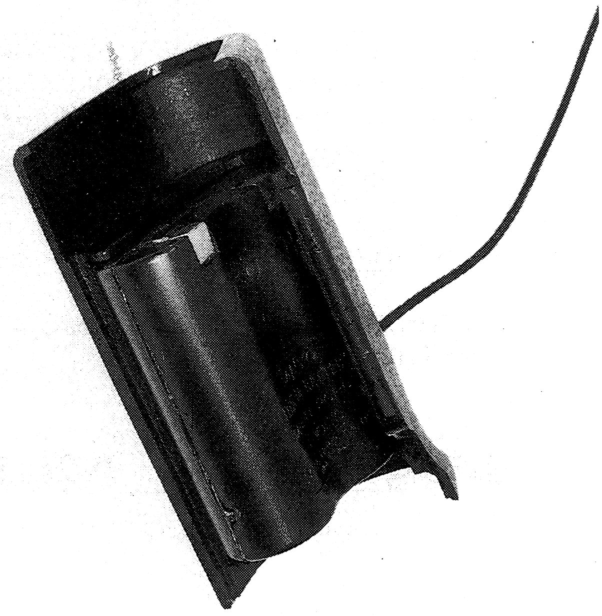
2. Release Tool (Used to release shutter without Top Cover installed)

   The release switch design does not allow easy release without using a driver or other small, hard instrument which could reduce reliability. Make this tool to release the shutter during running checks.



## 3. Tool Battery (Inhibit Voltage and running checks)

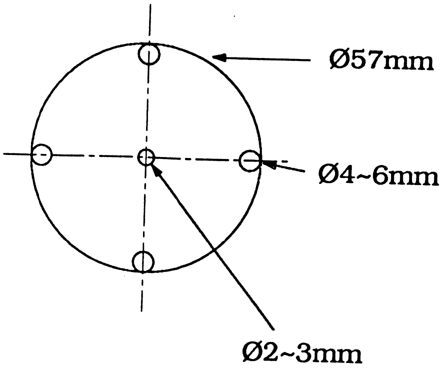
The reset switch is activated by the grip latch, so a modified grip with the present tool battery installed is necessary for checking the inhibit voltage in the electrical adjustments, and for running checks without the top cover.



## 4. Locally Fabricated Tools for Electrical Adjustment

### SPD positioning mask

Cut holes in a piece of flat black paper as shown in the figure.

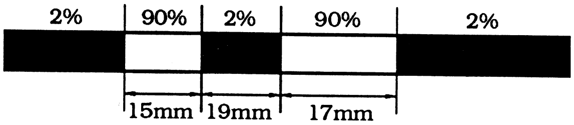


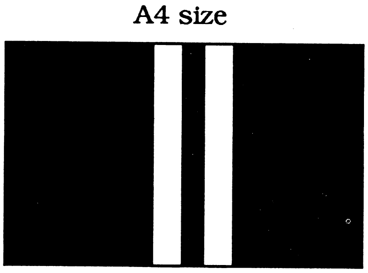
Reflective Paper for Charts

| | |
|---|---|
| Reflective paper (black) (2%) | CY9-1066-000 |
| Reflective paper (gray) (64%) | CY9-1067-000 |
| Reflective paper (white) (90%) | CY9-7076-000 |

## AF reference chart

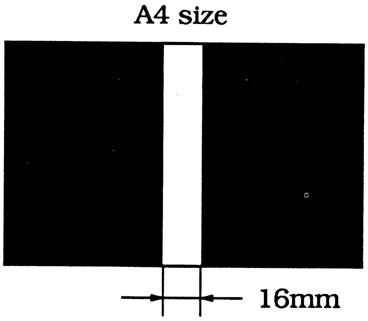
Attach 90% white paper to 2% black base as shown in the figure below.





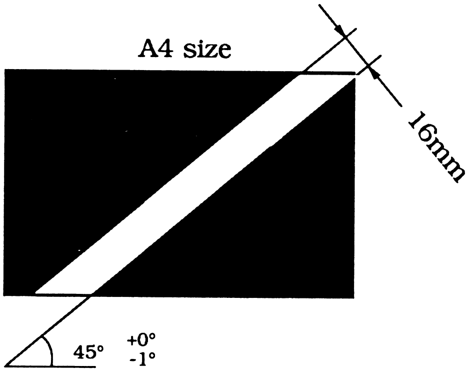
## 16mm bar chart (AF accuracy check)

Attach 16mm wide 90% paper vertically to A4 size 2% paper as shown in the right figure.



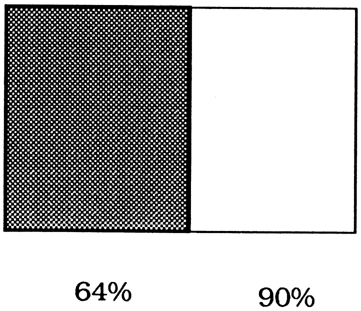
## 45°bar chart (AF accuracy check)

On a sheet of 2% A4 chart paper, attach a 16mm wide strip of 90% paper at a 45° from the upper right corner as shown in the right figure.



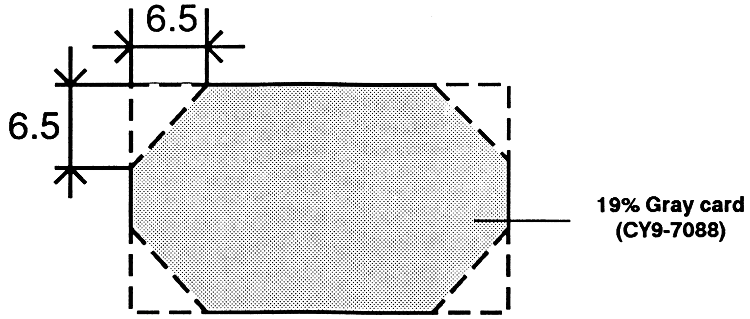
## Low-contrast chart (AF accuracy check)

Make chart with one half 64% light gray and the other half 90% white chart paper.

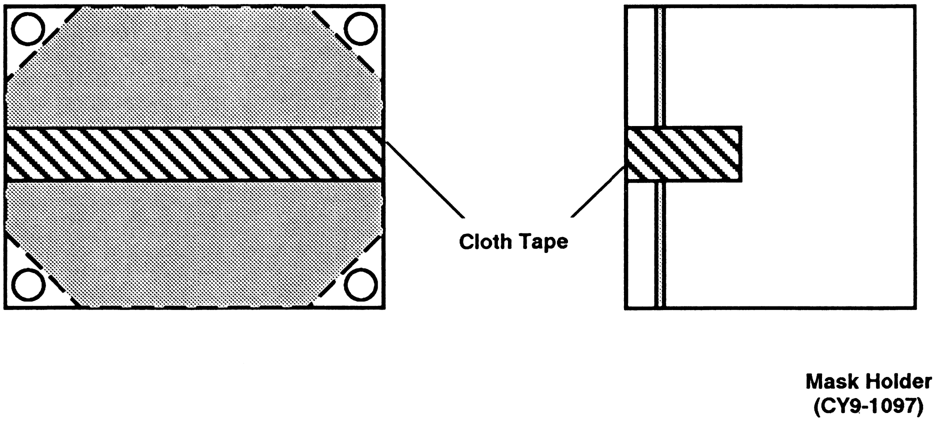


## CCD Adjustment Chart Preparation

1. Trim the corners of the 19% Gray Card (CY9-7088) as shown. When cutting, be careful no to dirty the gray side of the card.


6.5
6.5
19% Gray card
(CY9-7088)

2. Remove the transluscent back plate of the Mask Holder (CY9-1097) and set the trimmed chart in the mask holder with the gray side facing inward. Reset the back plate on the pins and tape in place.


Cloth Tape
Mask Holder
(CY9-1097)

## MEMO

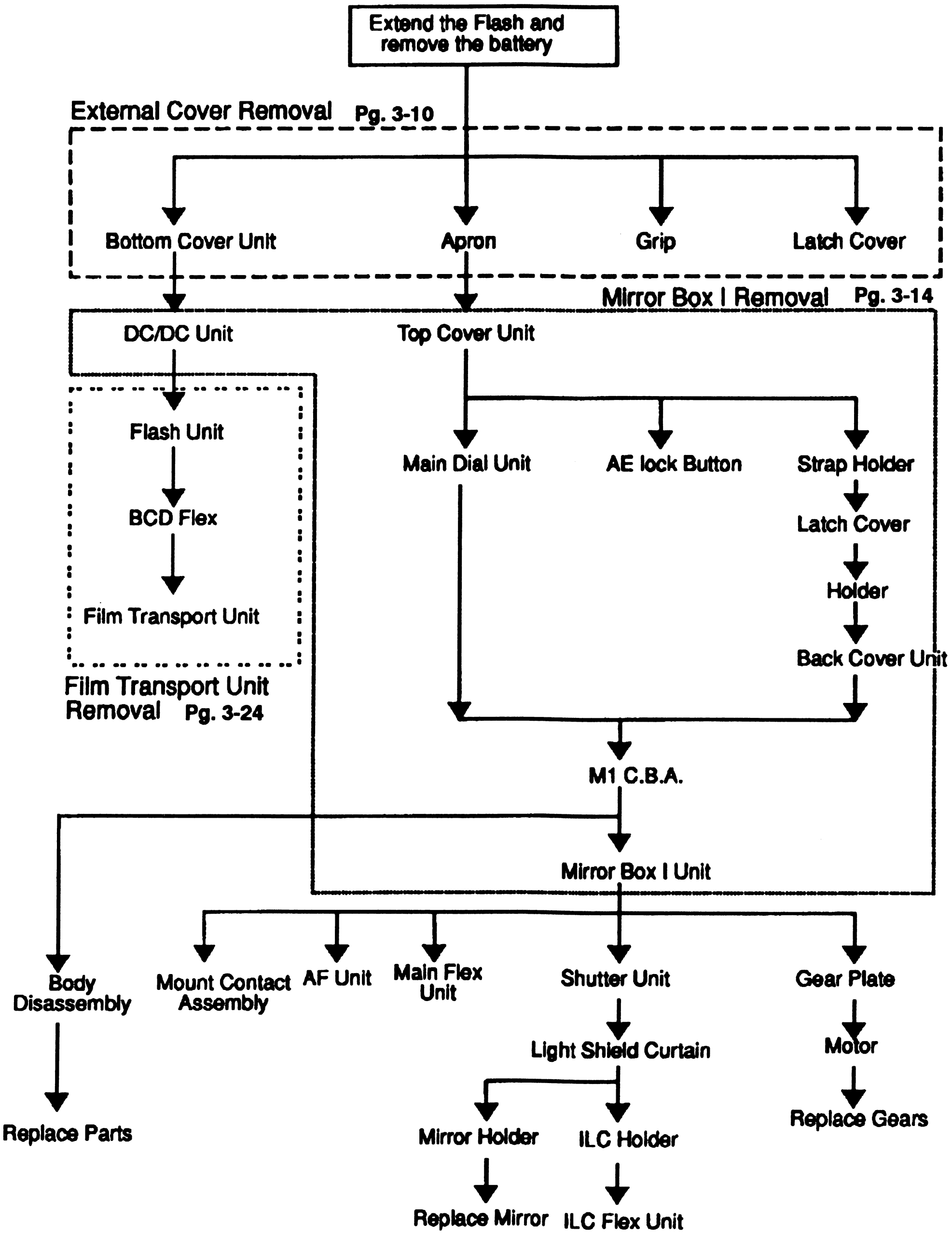
## ASSEMBLY and DISASSEMBLY

1. Disassembly and Assembly Sequence

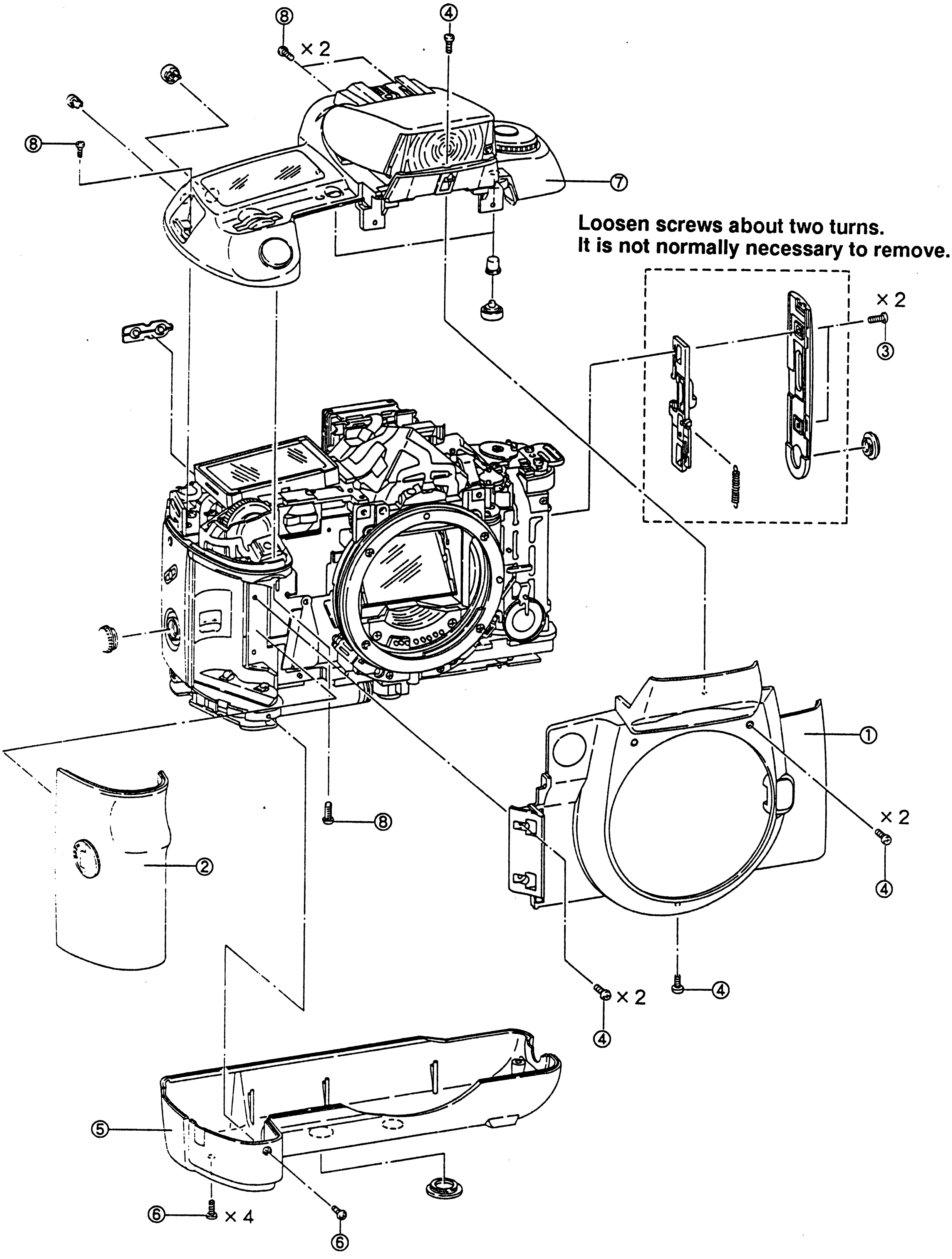
The standard disassembly sequence pattern is shown. Follow it when initially disassembling the camera. Use the reverse procedure, along with the assembly notes, for reassembly. After you have mastered the camera, this procedure can be modified if you find more efficient procedures.

2. Disassembly Precautions

If disassemblies which require electrical adjustments after reassembly are to be done, be sure to transfer the camera data to the multiple tool BEFORE starting the disassembly.


Extend the Flash and remove the battery
External Cover Removal Pg. 3-10
Bottom Cover Unit
Apron
Grip
Latch Cover
Mirror Box I Removal Pg. 3-14
DC/DC Unit
Top Cover Unit
Flash Unit
BCD Flex
Film Transport Unit
Film Transport Unit Removal Pg. 3-24
Main Dial Unit
AE lock Button
Strap Holder
Latch Cover
Holder
Back Cover Unit
M1 C.B.A.
Mirror Box I Unit
Body Disassembly
Mount Contact Assembly
AF Unit
Main Flex Unit
Shutter Unit
Gear Plate
Light Shield Curtain
Motor
Replace Parts
Mirror Holder
ILC Holder
Replace Gears
Replace Mirror
ILC Flex Unit

## External Covers


⑧
× 2
④
⑧
⑦
Loosen screws about two turns.
It is not normally necessary to remove.
× 2
③
①
× 2
④
②
⑧
× 2
④
④
④
⑤
⑥
× 4
⑥

# EXTERNAL COVERS

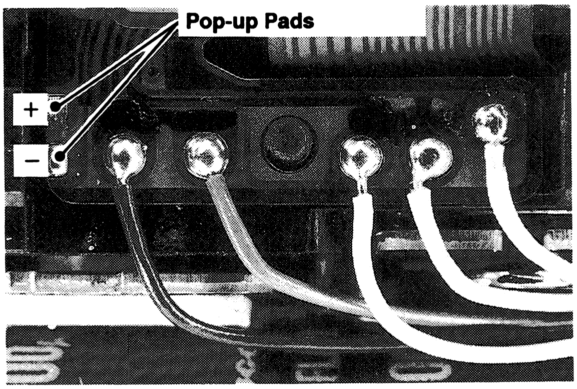
## Disassembly Notes

1. **BLEED THE FLASH CAPACITOR** whenever the top or bottom cover is removed.
2. The flash must be extended before the apron can be removed.

## Disassembly Order

### 1. Apron Removal

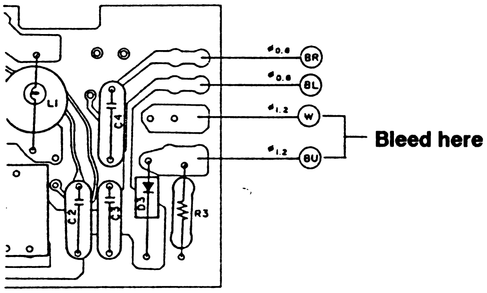
1. To remove the Apron (1) the flash must be up before the apron can be removed. Use one of the three alternate methods depending on the state of the camera.
   1) If the camera can be turned on, install the battery, pop up the flash, and remove the battery.
   2) If the camera will not come on, remove the bottom cover and apply about 1.5 volts to the points indicated. The flash will pop up.



   3) If the problem is in the flash gear train so the flash will not extend, you must break the apron to remove it.
2. Remove the grip (2).
3. Loosen the screws (3) holding the back cover latch cover.
4. Remove the six apron screws (4), and remove the apron.

### 2. Bottom Cover Unit Removal

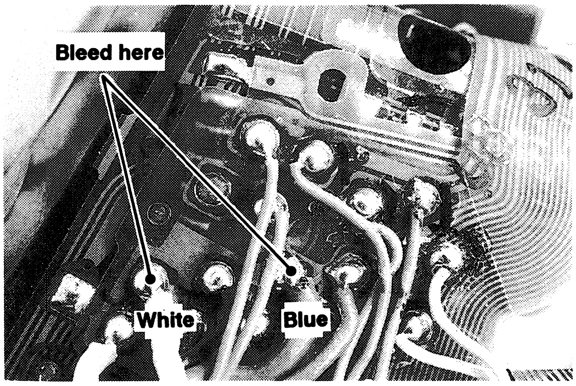
1. Remove the five screws (6) and remove the bottom cover unit.
2. Bleed the flash capacitor by connecting the bleeder resistor at the points indicated.
   DO NOT bleed at the capacitor terminals.



Bleed at blue and white lead connections on the flash circuit board.

### 3. Top Cover Unit Removal

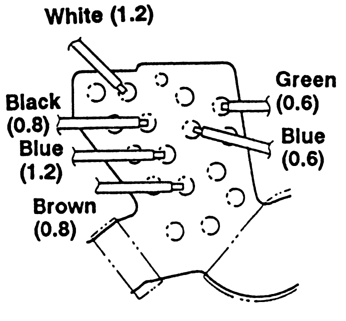
**CAUTION**



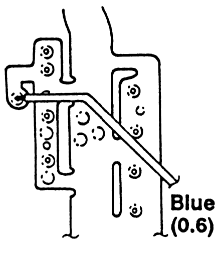
If the top cover is removed before the bottom cover, discharge the main flash capacitor at the points indicated.

1. Remove the four screws (8).

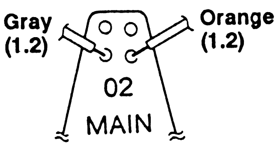
2. Unsolder the wires from the the top cover on the main flex and DX flex, release the connector and remove the top cover unit.



Main Flex (Penta)



DX Flex



Main Flex (Mount)

## Assembly Notes

1. Check the operation before reattaching the top cover.

2. Be careful not to pinch any leads when reinstalling the top cover.

## Assembly Order

Assembly order is the reverse of disassembly order.

## Cover-off Operational Check

This "Cover-off Operational Check" allows you to check operation without completely reassembling the camera.

### 1. CAUTIONS

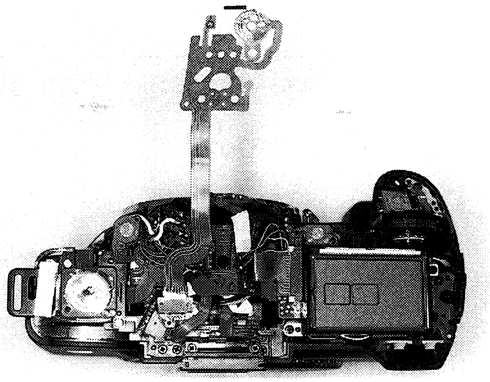
1) For this check the ST Flex and Release Button Kludges are necessary. (See LOCALLY FABRICATED TOOLS.)

2) Bridge the flash charging inhibit pads.

3) Install all parts except the top cover unit and apron.

### 2. PREPARATION

1) Connect the ST flex kludge.



2) Install the Release Button kludge.

3) Install the battery and grip.

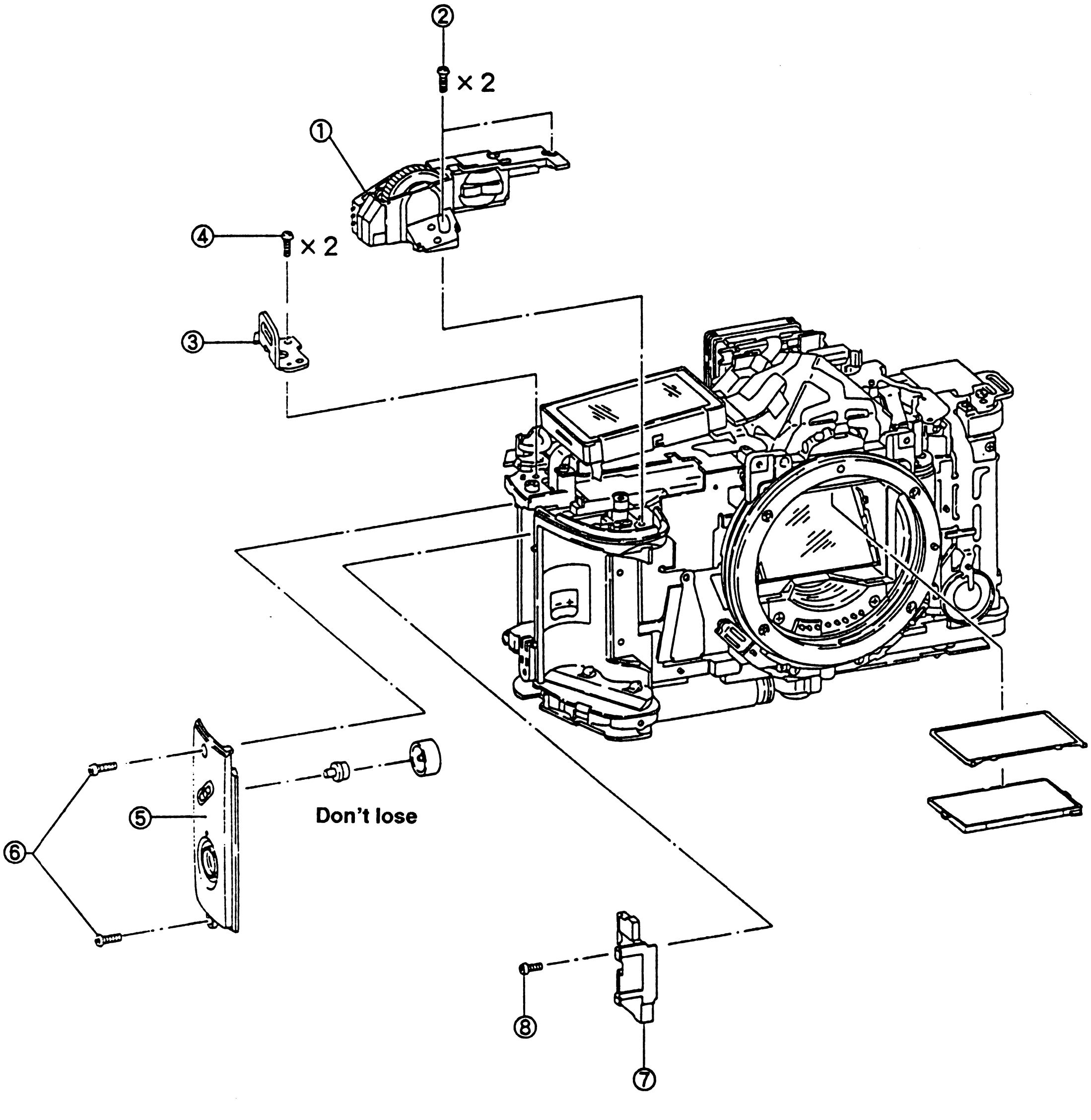
### 3. CHECK

Make all operational checks, following the instruction book, except flash and eye-controlled focus checks.

For AF checks, install the apron also. If it is not installed, the AF will not function properly.

# MEMO

# Mirror Box I (To Hinge Cover)


②
× 2
①
④
× 2
③
⑥
⑤
Don't lose
⑧
⑦

# MIRROR BOX I (To Hinge Cover)

## Disassembly Notes

1. Use the proper focusing screen removal tool when removing the screen. Sharp objects, like tweezers, can ruin the springs.
2. Take care where tearing of the flex could occur.

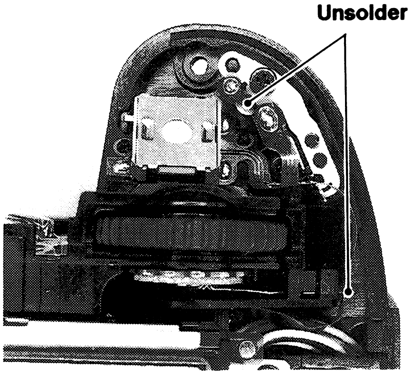
## Disassembly Order

### 1. Flex Connector

Open the sliders and disconnect the flex connecter.

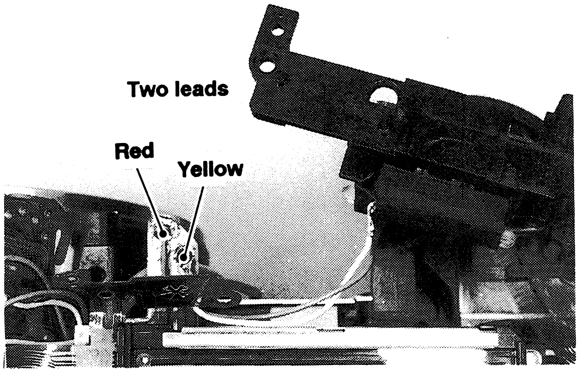
### 2. Release Switch Soldering

Unsolder the five thru-hole connections of the release switch.



### 3. Main Dial (Electronic Input Dial)

Remove two screws (2), and the two leads shown and remove the Main Dial Unit.

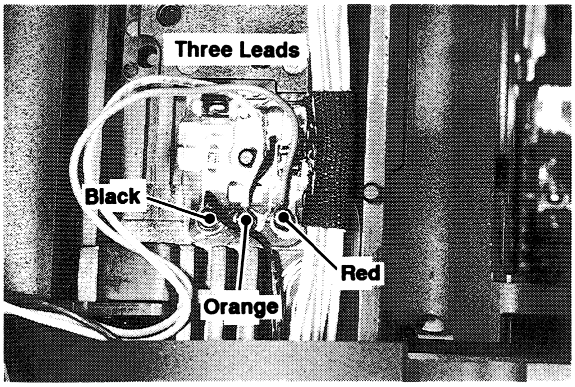


### 4. Strap Lug Removal (Right end)

Remove two screws (4) and remove the Strap Lug (3).

### 5. Hinge Cover and Base Removal

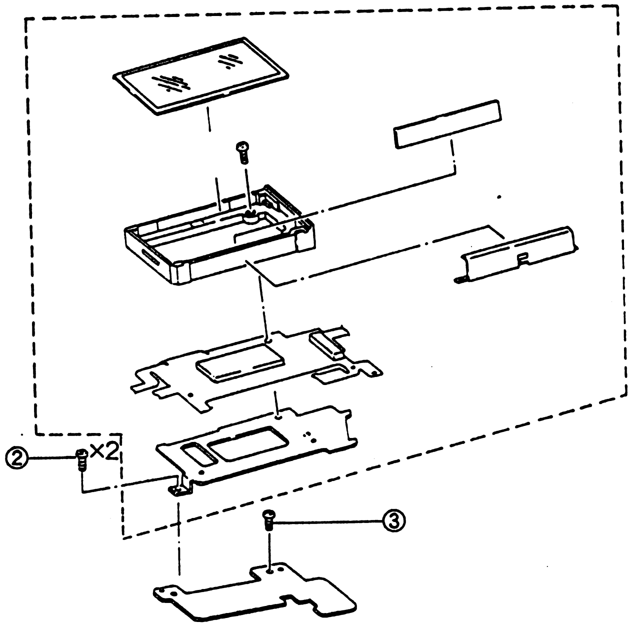
1. Remove two screws (6) and Hinge Cover (5).
2. Unsolder the three Remote Socket leads.

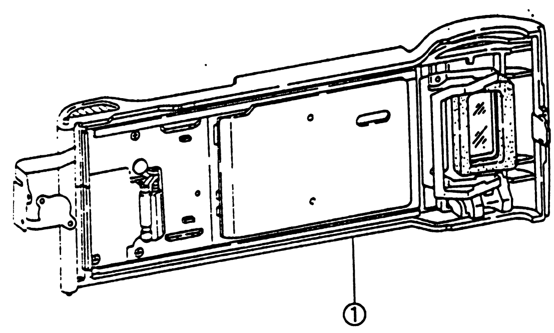


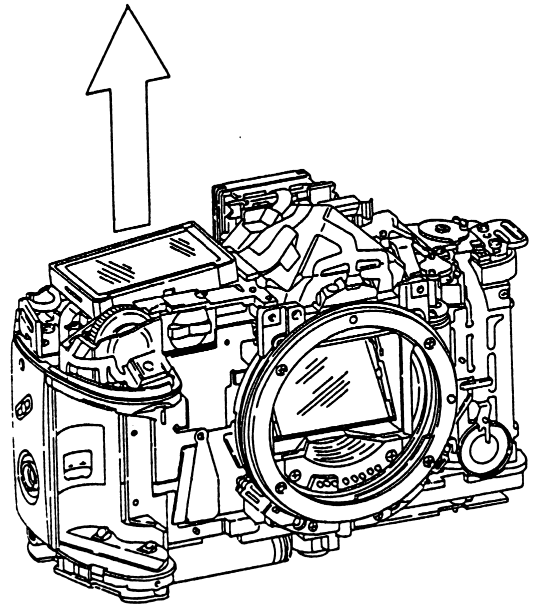
3. Remove the screw (8) holding the Hinge Base (7) and remove the base.

# Mirror Box II (To M1 C.B.)

It is not normally necessary to remove.

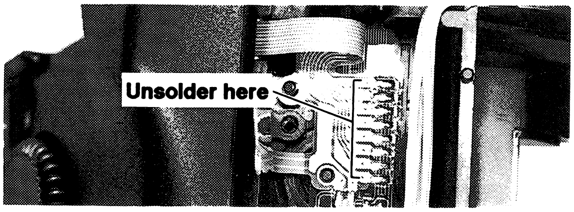






## Disassembly Order (continued)

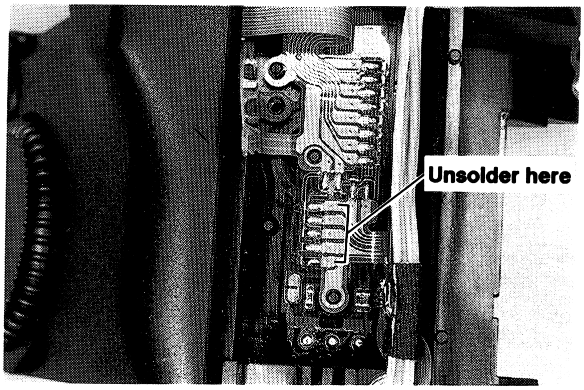
### 6. Back Cover Unit Removal


Unsolder here

Unsolder the comb connector and remove the Back Cover Unit (1).

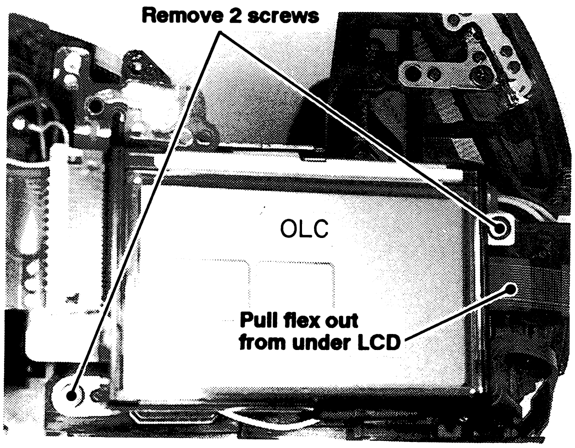
### 7. BCD Flex Soldering

Unsolder the comb connector of the BCD Flex as shown below.


Unsolder here

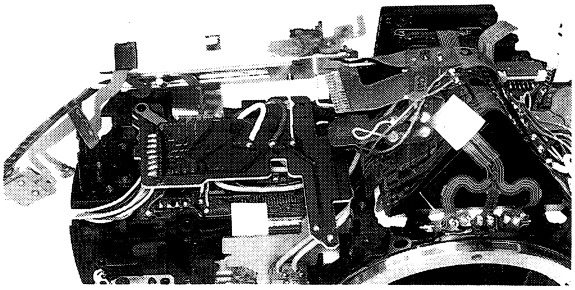
### 8. LCD (OLC) Display Screws

Remove two screws (2), lift the display and pull the flex to the hinge cover side from under it. **DO NOT actually remove the LCD panel unless it is faulty.**


Remove 2 screws
OLC
Pull flex out
from under LCD

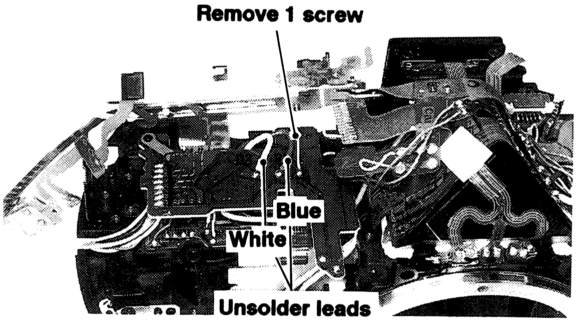
### 9. M1 Circuit Board Removal

1. Move the LCD panel out of the way toward the rear. Do not crimp the flex. Crimping causes flex cracks.



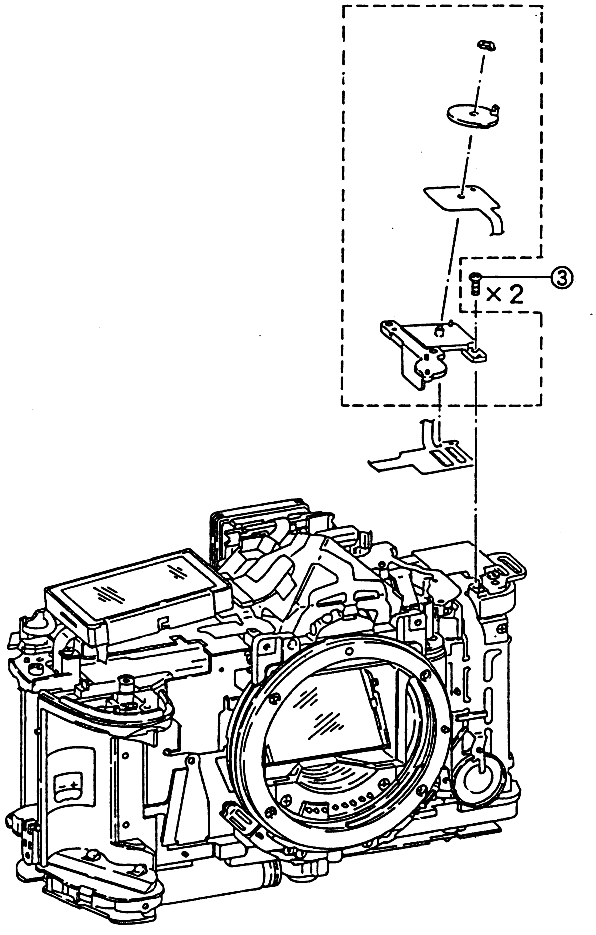
2. When the M1 Circuit Board must be replaced, unsolder all lead wires, the comb connector and one screw.

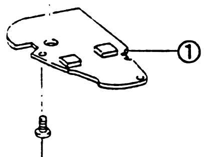
   If the circuit board is not faulty, unsolder only the two lead wires shown, and remove the screw (2). The comb connector need not be unsoldered. Move the circuit board out of the way with the LCD panel toward the rear.


Remove 1 screw
Blue
White
Unsolder leads

# Mirror Box III

Removal not normally necessary

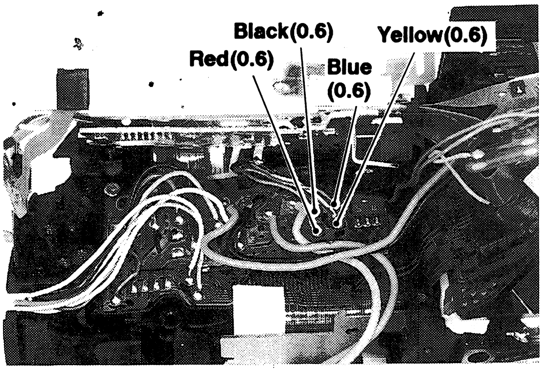




## Disassembly Order (continued)

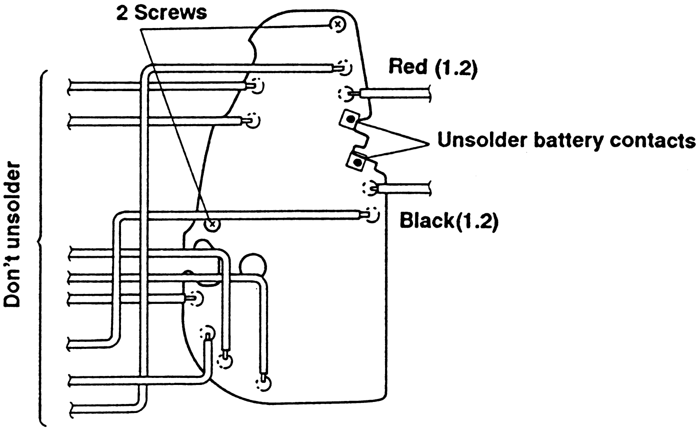
### 10. Signal C.B. Lead Removal

Unsolder the four leads shown from the Signal C.B.


Black(0.6)
Yellow(0.6)
Red(0.6)
Blue
(0.6)

### 11. DC/DC Convertor Removal

Unsolder the two battery contacts, remove two screws (2), and remove the DC/DC Convertor. It is not necessary to unsolder the leads to the main flex at this time.

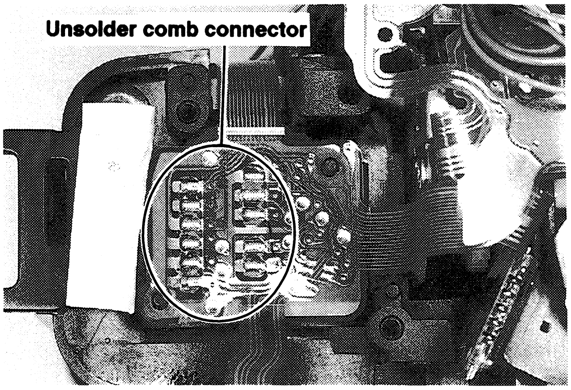

2 Screws
Red (1.2)
Unsolder battery contacts
Black(1.2)
Don't unsolder

### 12. Mode Dial Base Removal

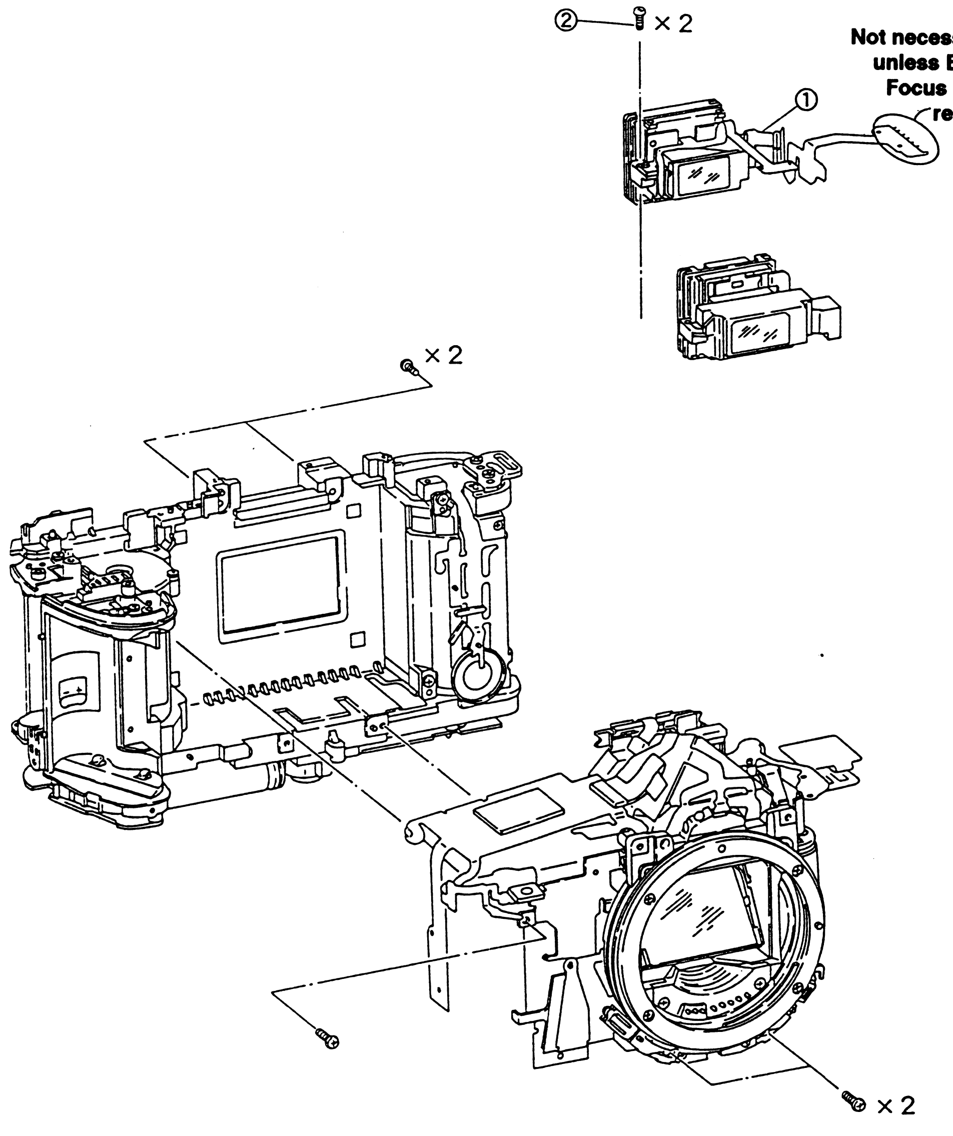
Remove two screws (3) from the Mode Dial Base.

### 13. DX ⇔ Main Flex comb connector Soldering

Unsolder the comb connector between the DX Flex and the Main Flex.


Unsolder comb connector

# Mirror Box & Eye-controlled Focus Unit Removal



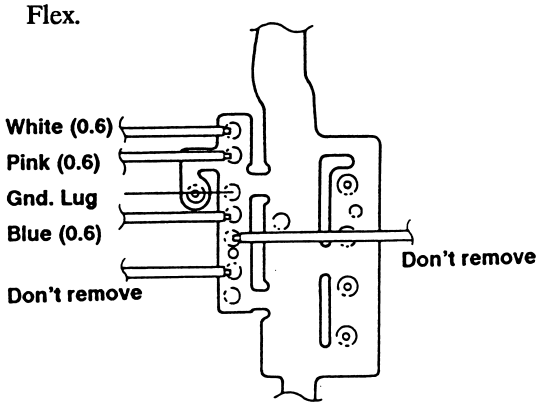
Not necessary to unsolder unless Eye-controlled Focus Unit is being replaced.

# MIRROR BOX & EYE-CONTROLLED FOCUS UNIT REMOVAL

## Disassembly Order (continued)

### 14. DX Flex Lead Soldering

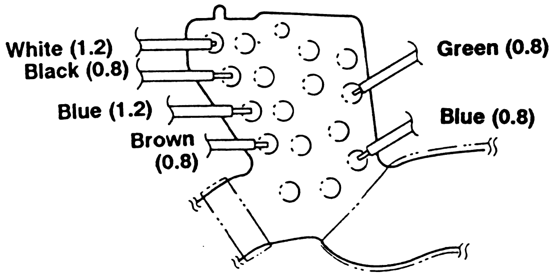
Unsolder the five leads shown from the DX Flex.


White (0.6)
Pink (0.6)
Gnd. Lug
Blue (0.6)
Don't remove
Don't remove

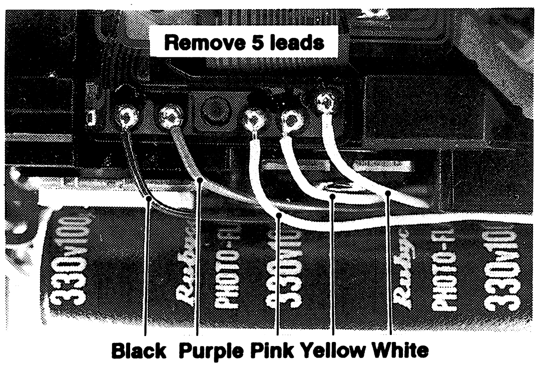
### 15. Flash Circuit Lead Soldering

Unsolder all the flash circuit leads from both the pentaprism area and the lower body area, as detailed below.

**Pentaprism Area**

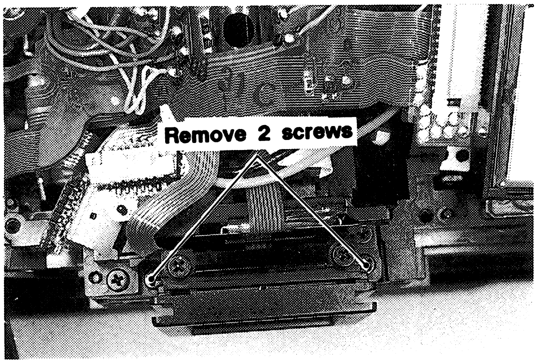

White (1.2)
Black (0.8)
Blue (1.2)
Brown (0.8)
Green (0.8)
Blue (0.8)

**Lower Body**


Remove 5 leads
Black
Purple
Pink
Yellow
White

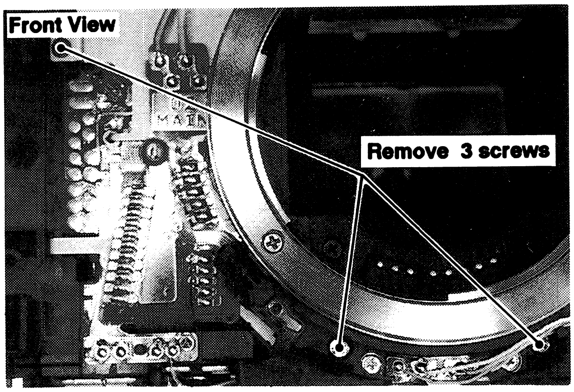
### 16. Eye-controlled Focus Unit (Eyepiece Unit) Removal

Remove the two screws (2) from the Eye-controlled Focus Unit (or the Eyepiece Unit), and remove the unit. At this time it is not necessary to unsolder the Eye-controlled Focus Unit.

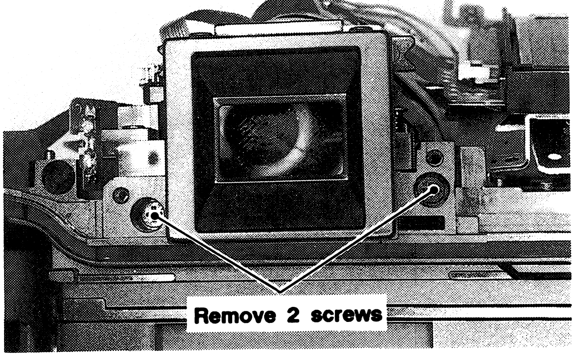

Remove 2 screws

### 17. Mirror Box Removal

Remove the five screws (three from the front and two astride the eyepiece) and remove the Mirror Box.


Front View
Remove 3 screws

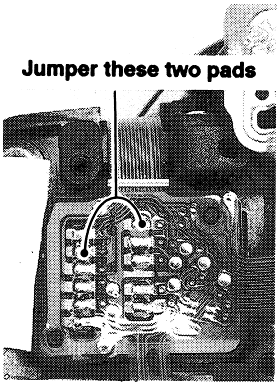
**Rear View**


Remove 2 screws

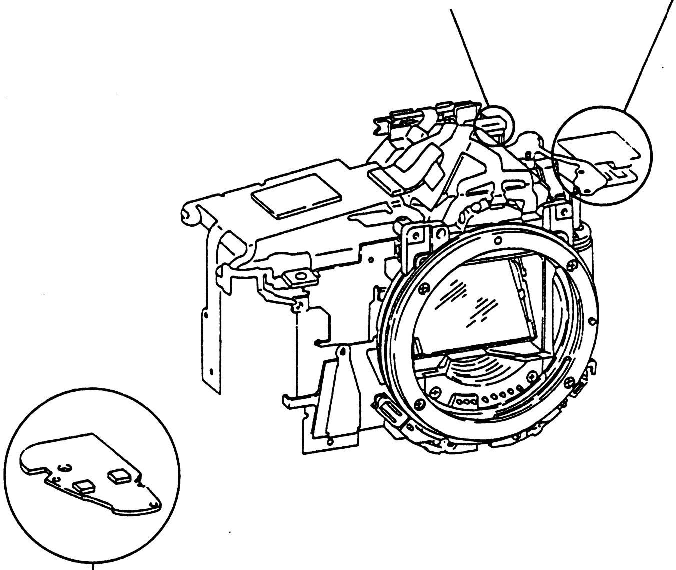
# Mirror Box Operational Checks

① **Attach ST Flex kludge or connect the Accessory shoe (ST) flex.**

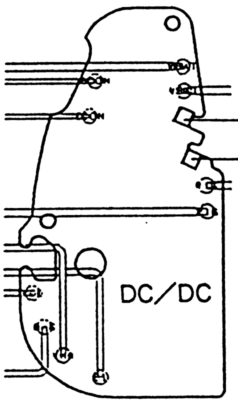
②



**Jumper these two pads**



③ **Attach the Regulated Power Supply**



**Attach Regulated Power Supply**

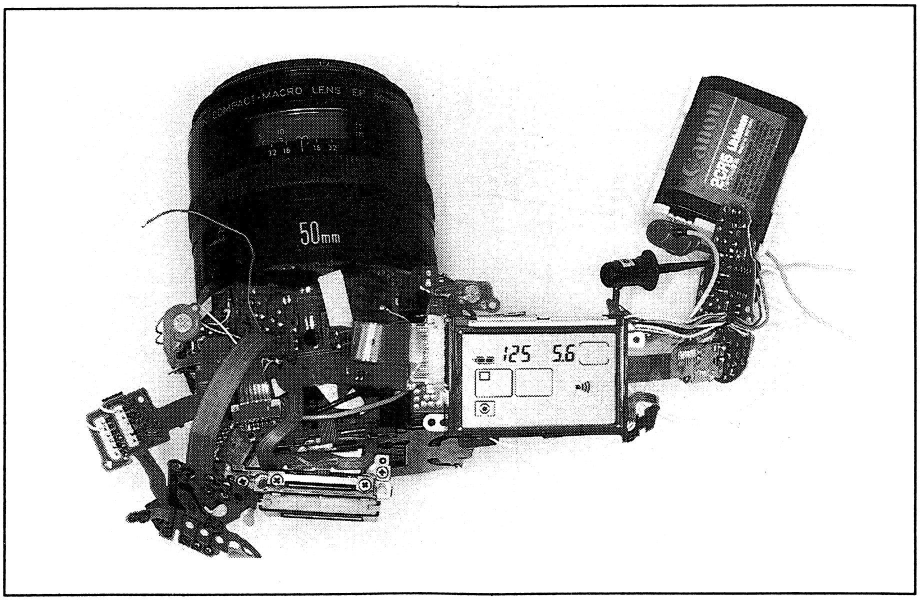
# MIRROR BOX Operational Checks

## Assembly Notes

1. Be careful not to break the 'combs' when jumping the comb connector.
2. When an EOS 5, 5QD or A2E is being tested, the Eye-controlled Focus unit is loose. Secure it with tape to prevent damage.
3. Don't harm the shutter blades.
4. If you are goig to adjust the curtain travel time, Attach the main dial, set the camera to manual and attach a lens. Set the lens to maximum aperture if the EF8000 is being used.

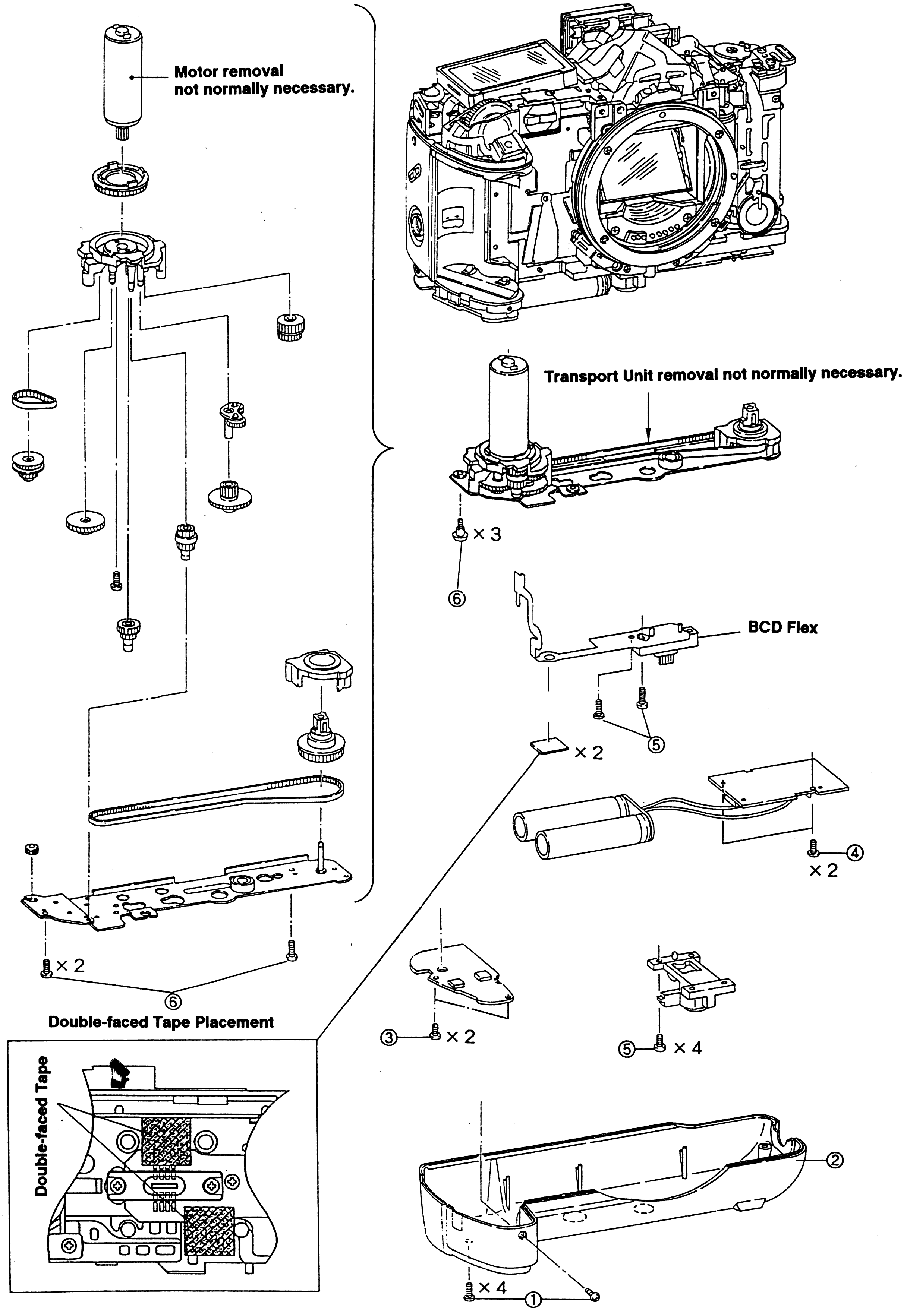
## Assembly Order

1. Attach the ST Flex kludge or connect the Accessory shoe (ST) flex.
2. Jumper the comb connector below the command dial.
3. Attach the regulated DC Power Supply to the battery contact lugs, and apply 6VDC.



Front Panel Rigged for Operational Checks

# Film Transport Unit Removal


Motor removal not normally necessary.
Transport Unit removal not normally necessary.
× 3
⑥
BCD Flex
⑤
× 2
④
× 2
× 2
⑥
Double-faced Tape Placement
Double-faced Tape
③
× 2
⑤
× 4
②
× 4
①

# FILM TRANSPORT UNIT REMOVAL

## Disassembly Notes

This removal method is to remove the film transport unit directly, not as a part of a general disassembly. In it, we do not unsolder the lead wires. Be careful not to pull or twist the leads too much.

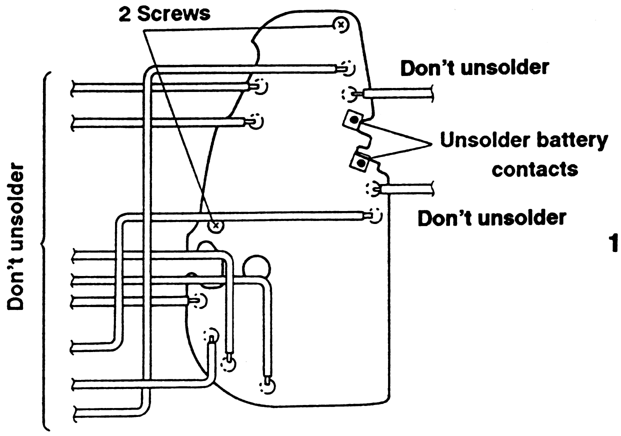
## Disassembly Order

1. Bottom Cover Removal

   Remove the five screws (1) and remove the Bottom Cover Unit.

2. DC/DC Convertor Detachment

   Unsolder the two battery contacts, remove two screws (2), and move the DC/DC Convertor out of the way.



3. Flash Circuit Board Detachment

   Remove the two screws (4), separate the capacitors from the tape and lift the circuit board out of the way.

4. Tripod Socket

   Remove the four screws (5) holding the tripod socket to the body and move the socket out of the way. It is not necessary to remove the screw holding the grounding wires to the tripod socket.

5. BCD Flex

   Separate from the double-faced tape, remove 2 screws and move the BCD Flex out of the way.

6. Film Transport Unit Disassembly

   Remove the five screws (6) to gain access to the gear train, but the M1 motor itself cannot be replaced without doing the top deck disassembly of M1 Circuit Board to unsolder the motor leads.

## Assembly Notes

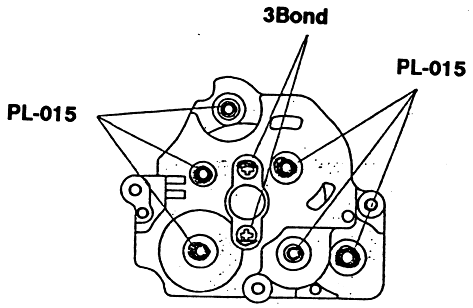
1. When reassembling the Film Transport Unit, check the condition of the rubber on the three noise-reduction mounting screws and replace them if necessary.

2. Refer to the color photographs in the back of the book for lead colors and dress.

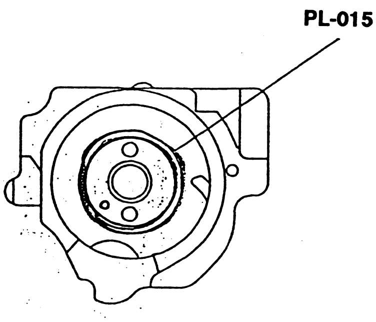
## Assembly Order

Assembly order is the reverse of disassembly order

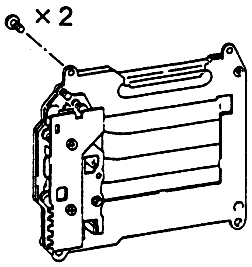
1. Lubricate the gear spindles on the gear base with PL-015, and stake screw heads with 3BOND 1041B >

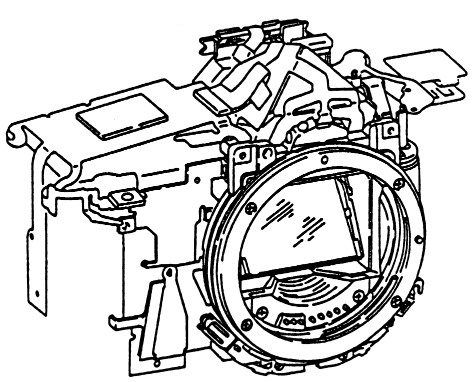


2. Apply PL-015 to fork base as shown.



# Units – Shutter Unit

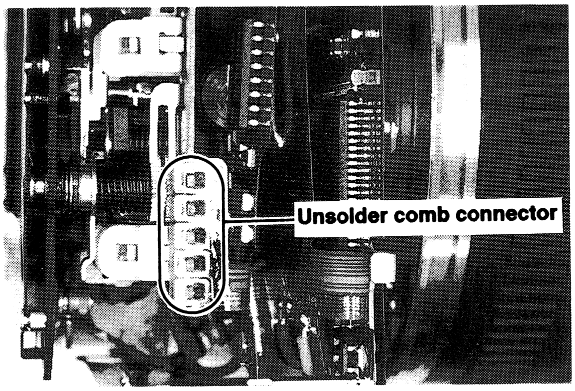




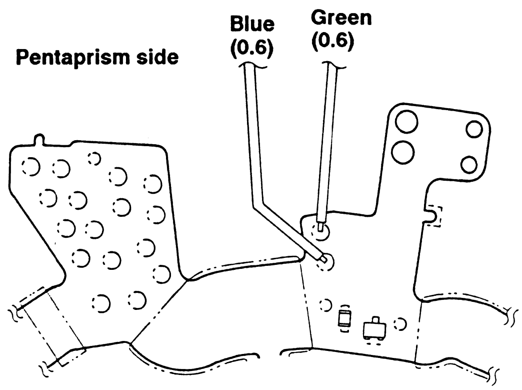
## Disassembly Notes

### Disassembly Order

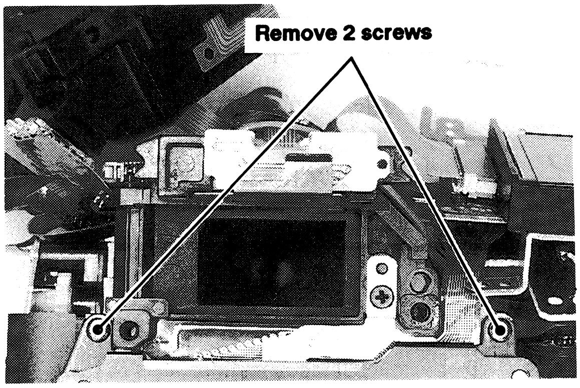
1. Unsolder the shutter unit comb connector.


Unsolder comb connector

2. Unsolder the two leads from the Shutter Unit.


Pentaprism side
Blue
(0.6)
Green
(0.6)

3. Remove the two screws from the top of the Shutter Unit.

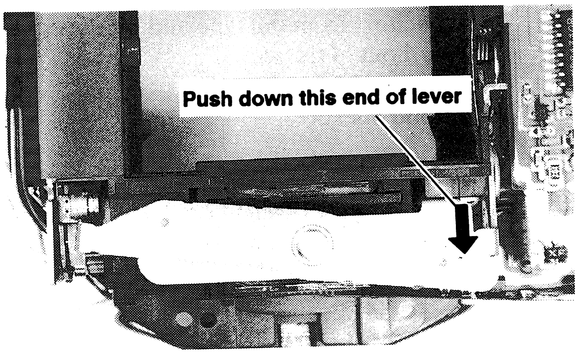

Remove 2 screws

## Assembly Notes

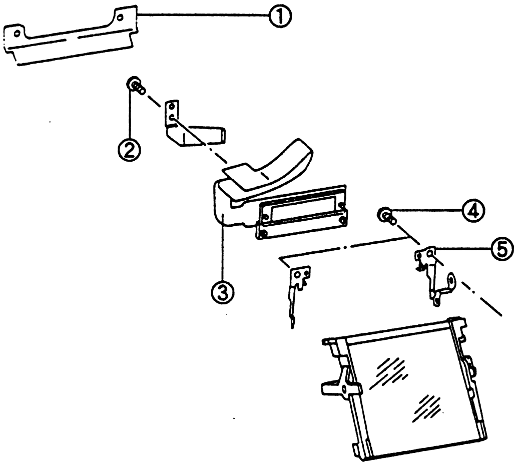
Reverse the removal process to reinstall the shutter Unit.

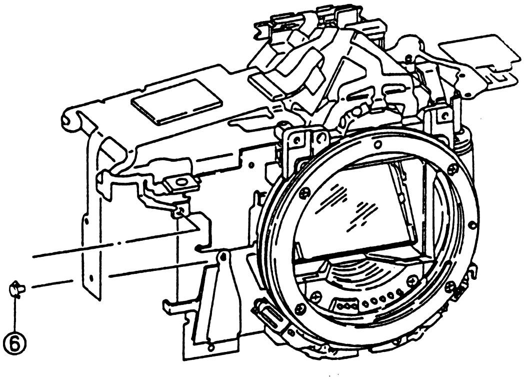
**CAUTION**

When installing the shutter onto the mirror box, insure that the See-Saw (Link) lever is in the position shown.


Push down this end of lever

# Units – Mirror and Viewfinder LCD Units





## Disassembly Notes

### Disassembly Order

1. Shutter Light Shield Removal

   The light shield (1) is bonded in place. Remove it carefully so it can be used again.

2. Viewfinder LCD (ILC) Unit Removal

   Remove the screw (2) and remove the Viewfinder LCD Unit (3).

3. Mirror Unit Removal

   1) Remove the screw (4) from each mirror hinge (5)

   2) Sub-mirror Pin
   Press the sub-mirror pin (6) outward from inside the mirror box, and remove it.

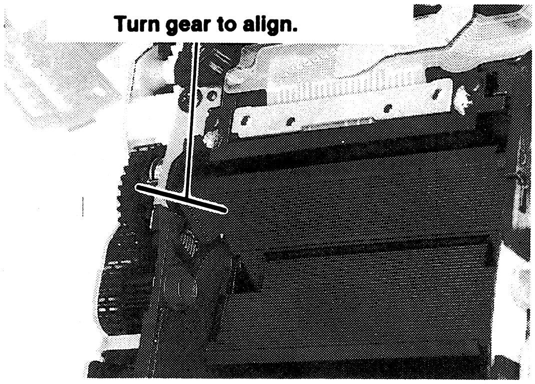
   3) Mirror Unit Removal
   Remove the Mirror Unit from the rear (shutter) side of the Mirror Box.

## Assembly Notes

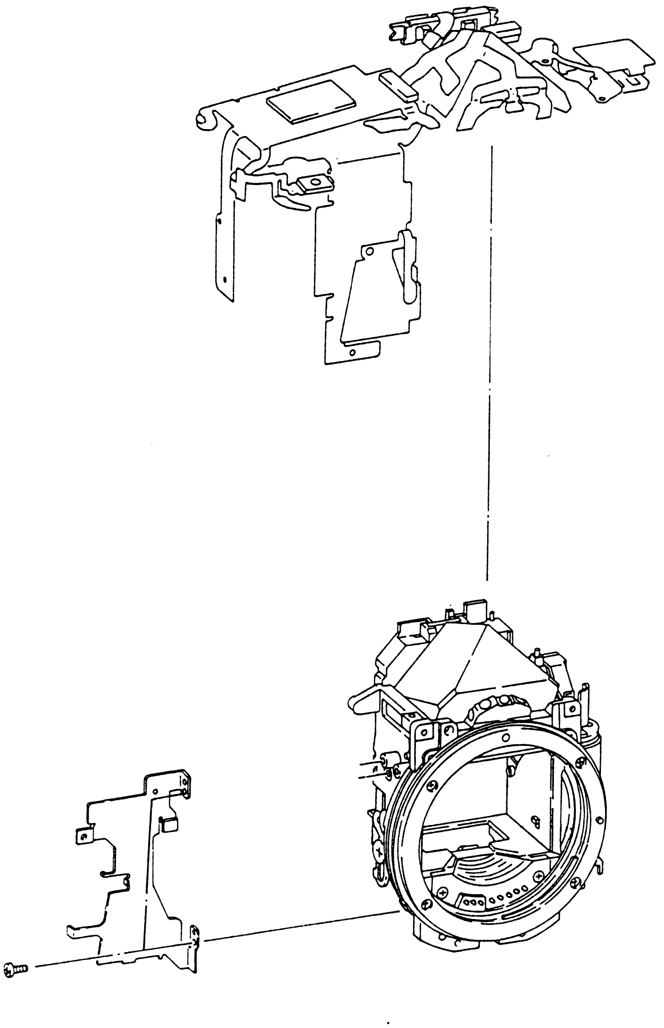
Reverse the removal process to reinstall the Mirror Unit, being careful of the following points.

**■ CAUTION**

When installing the Mirror, set the “mirror up” condition first.



# Main Flex Unit Removal



**If the Metering IC is disturbed, the alignment must be adjusted during reassembly.**

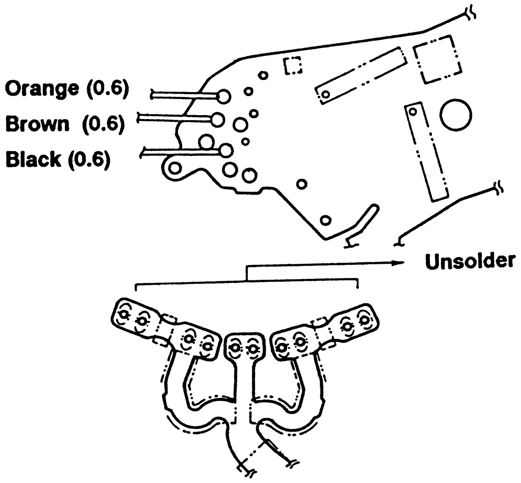
# MAIN FLEX UNIT REMOVAL

## Disassembly Notes

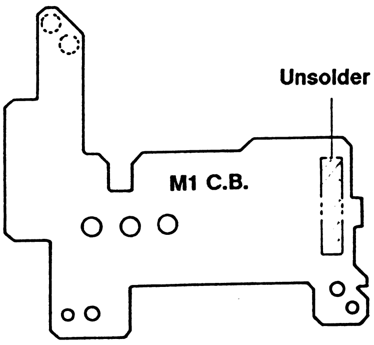
Be careful; not to tear the flex in all steps of the disassembly and reassembly. If the Metering IC is disturbed, the alignment must be adjusted during reassembly.

## Disassembly Order

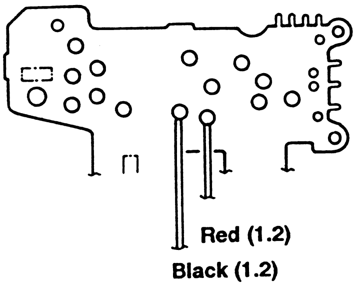
1. Phase C.B. Leads & Superimposed Display Thru-holes
   Unsolder all leads to the Phase C.B. and the Superimposed Display Thru-holes.


Orange (0.6)
Brown (0.6)
Black (0.6)
Unsolder

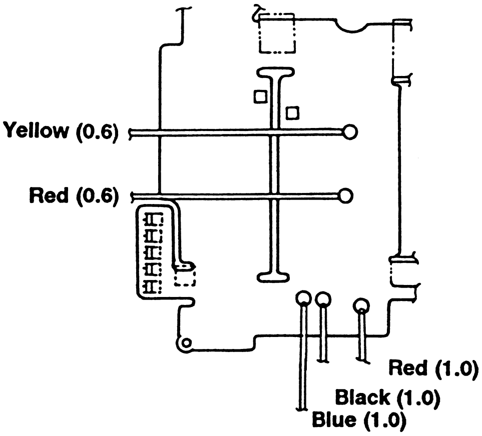
2. M1 C.B. Comb Connector Solder Removal
   Unsolder the M1 circuit board comb connector.


Unsolder
M1 C.B.

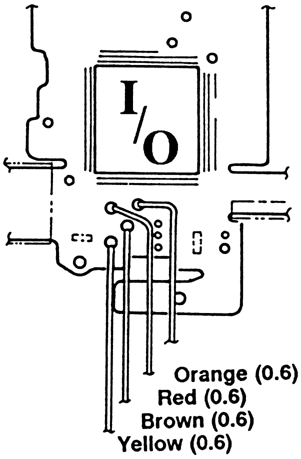
3. M2 Motor Lead Wires
   Unsolder the two M2 motor leads.


Red (1.2)
Black (1.2)

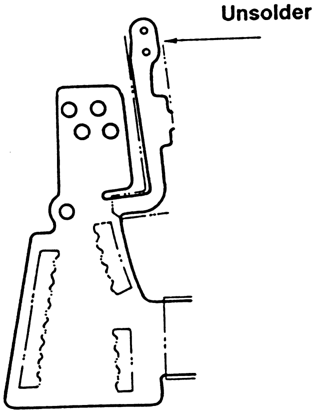
4. Mount Interface (MIF) Lead Wires
   Unsolder the three leads from the MIF and two from the superimposed display.


Yellow (0.6)
Red (0.6)
Red (1.0)
Black (1.0)
Blue (1.0)

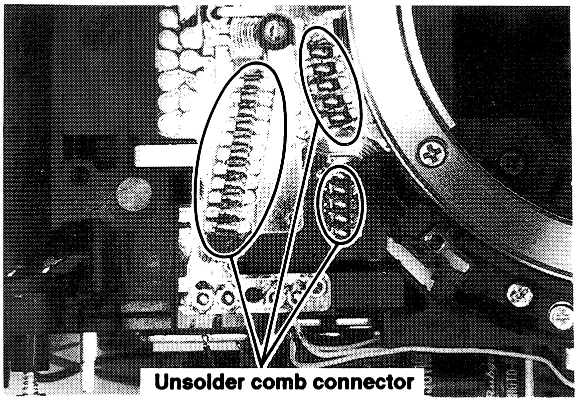
5. TTL-OTF Lead Wires
Unsolder the four leads from the TTL-OTF sensor.


I/O
Orange (0.6)
Red (0.6)
Brown (0.6)
Yellow (0.6)

6. Lens Switch Thru-holes
Unsolder the lens switch thru-holes.



7. AF Sensor Comb Connector
Unsolder the comb connector to the AF sensor.


Unsolder comb connector

8. Mirror Box "Wing" Removal
Remove the two screws holding the wing. Remove the wing and the Main Flex Unit can now be removed.

## Assembly Notes

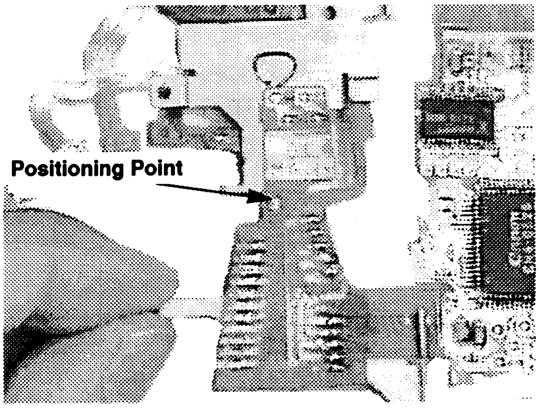
When the Main Flex is replaced, the electrical adjustments are necessary.

### Assembly Order

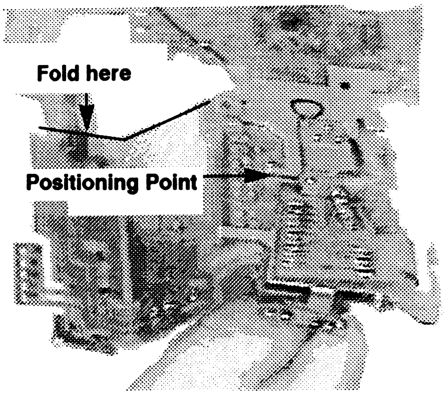
Resolder the Main Flex in the reverse order of disassembly.

1. Main Flex Installation
First, install the wing on the Main Flex as indicated in the photographs.

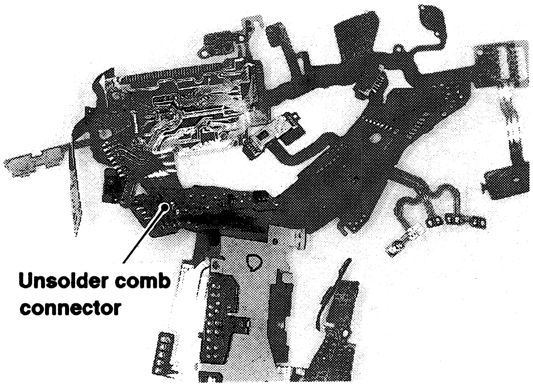
   1) Mate the AF comb connector portion of the main flex with the wing positioning pin.


Positioning Point

2) Fold the flex around the wing.


Fold here
Positioning Point

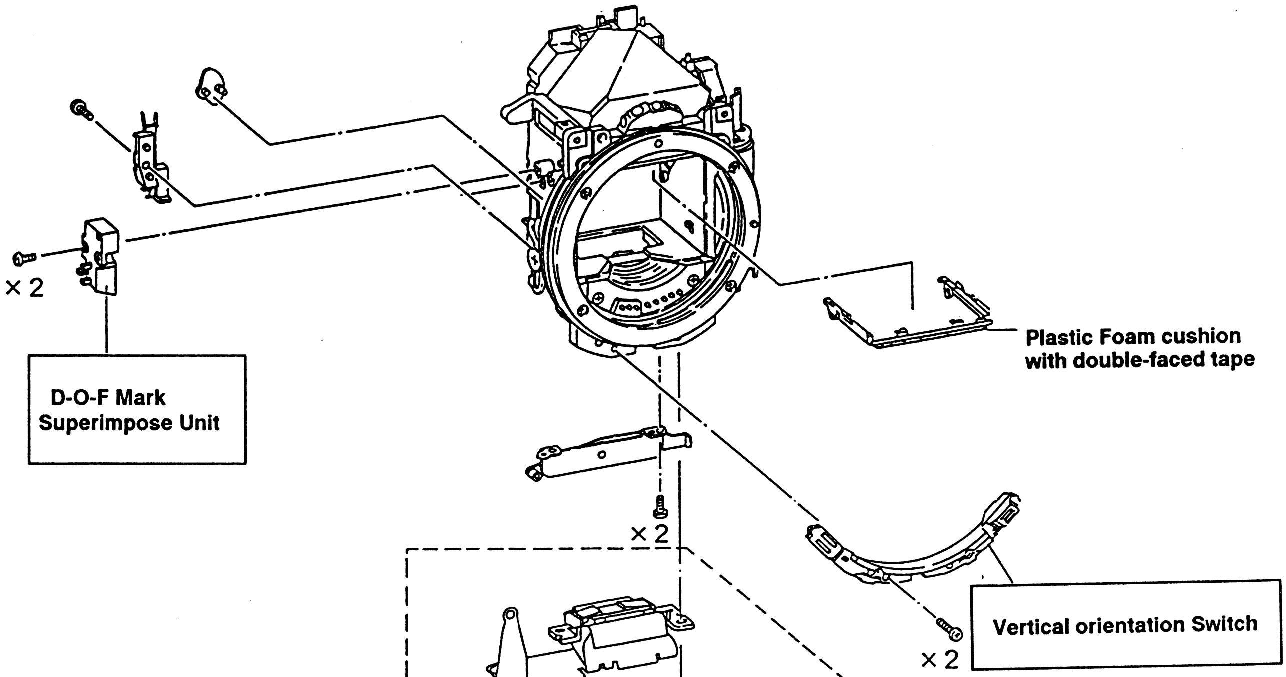
3) Solder as indicated below.


Unsolder comb connector

4) Attach the wind to the mirror box with two screws.

**2.** Refer to the wiring diagram and lead dress photographs in the back of the book when rewiring the camera.

# Mirror Box Disassembly I



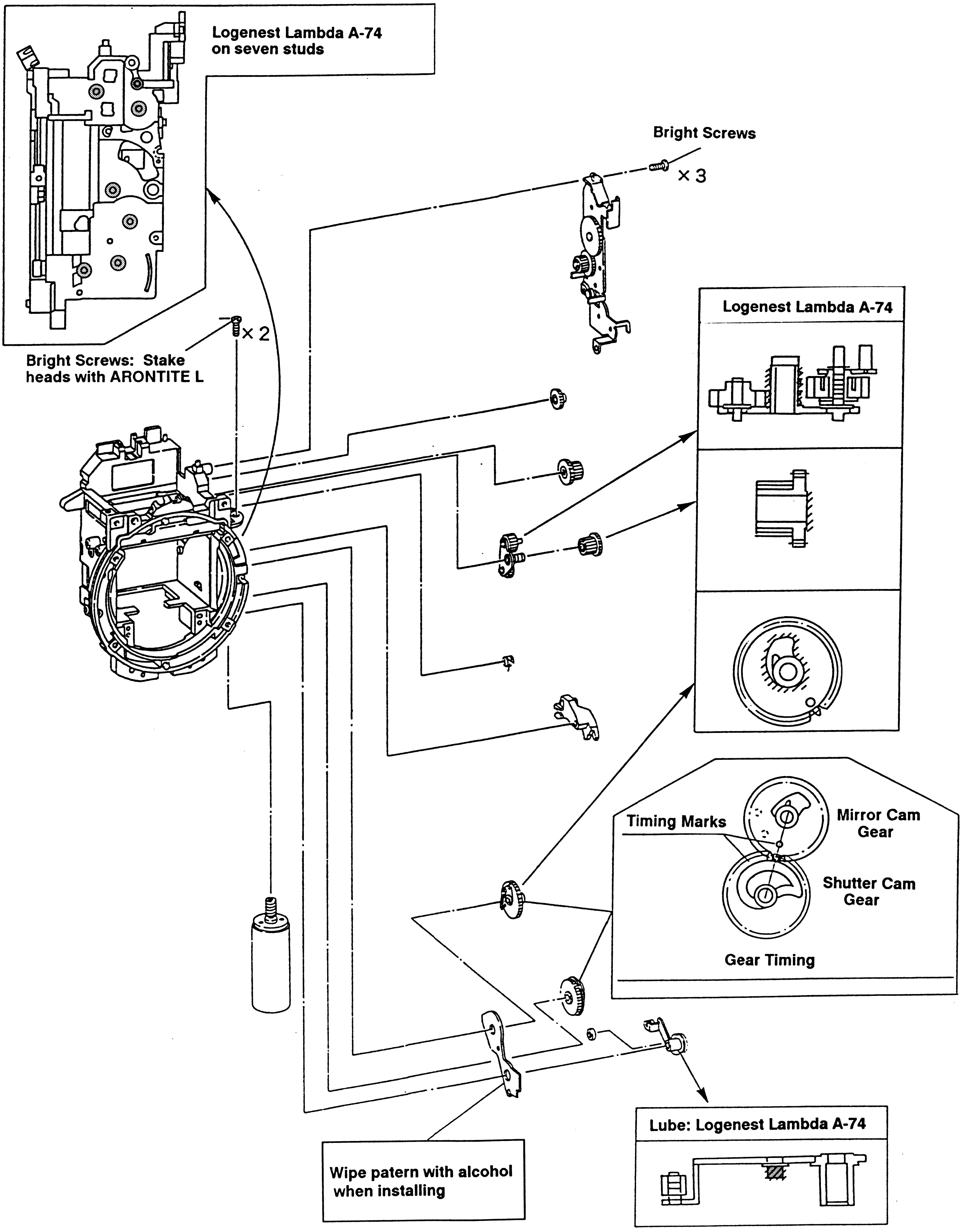
**D-O-F Mark Superimpose Unit**

**Plastic Foam cushion with double-faced tape**

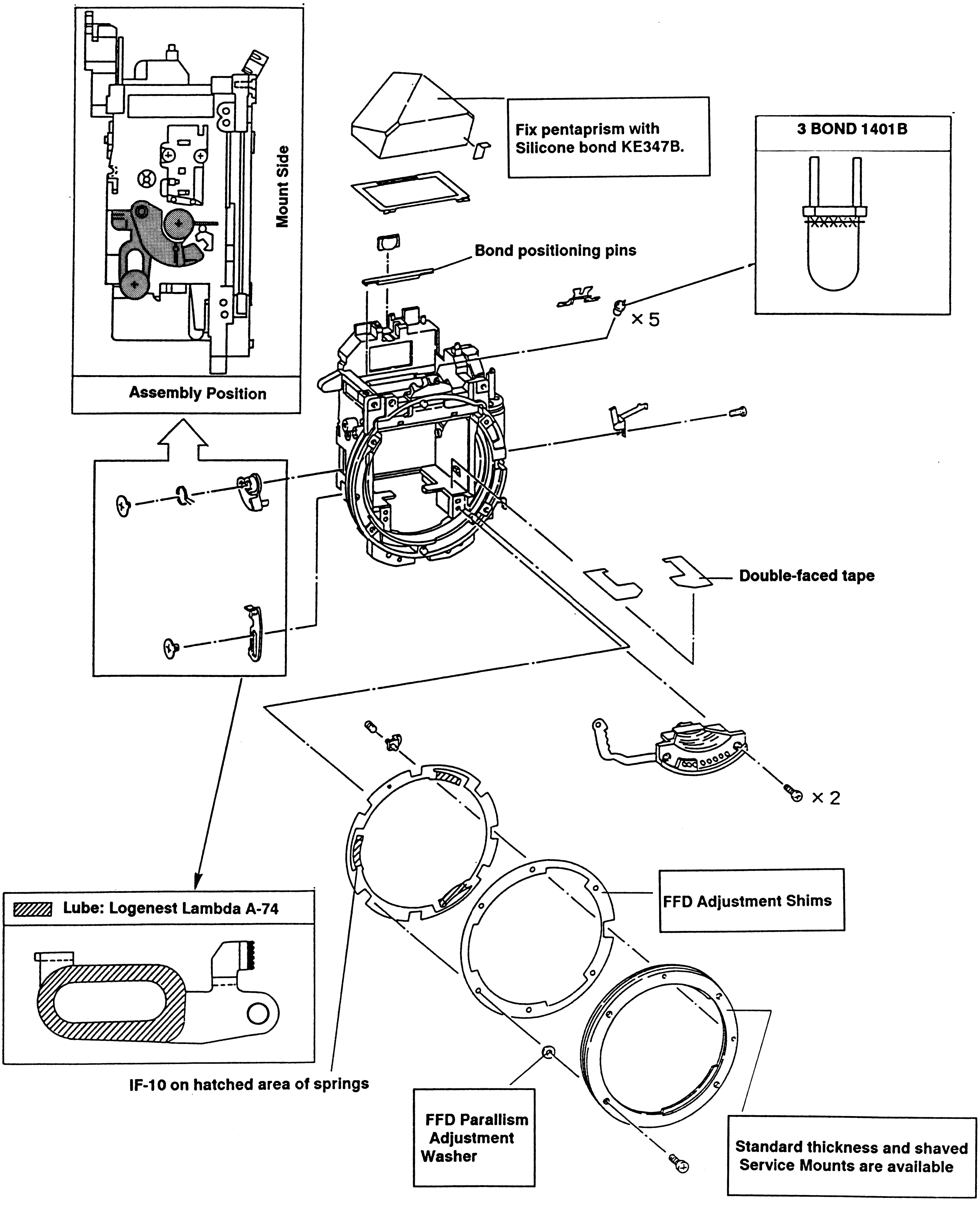
**Vertical orientation Switch**

**The sensor requires positioning. After adjustment, stake the screw heads with 3 BOND 1401B.**

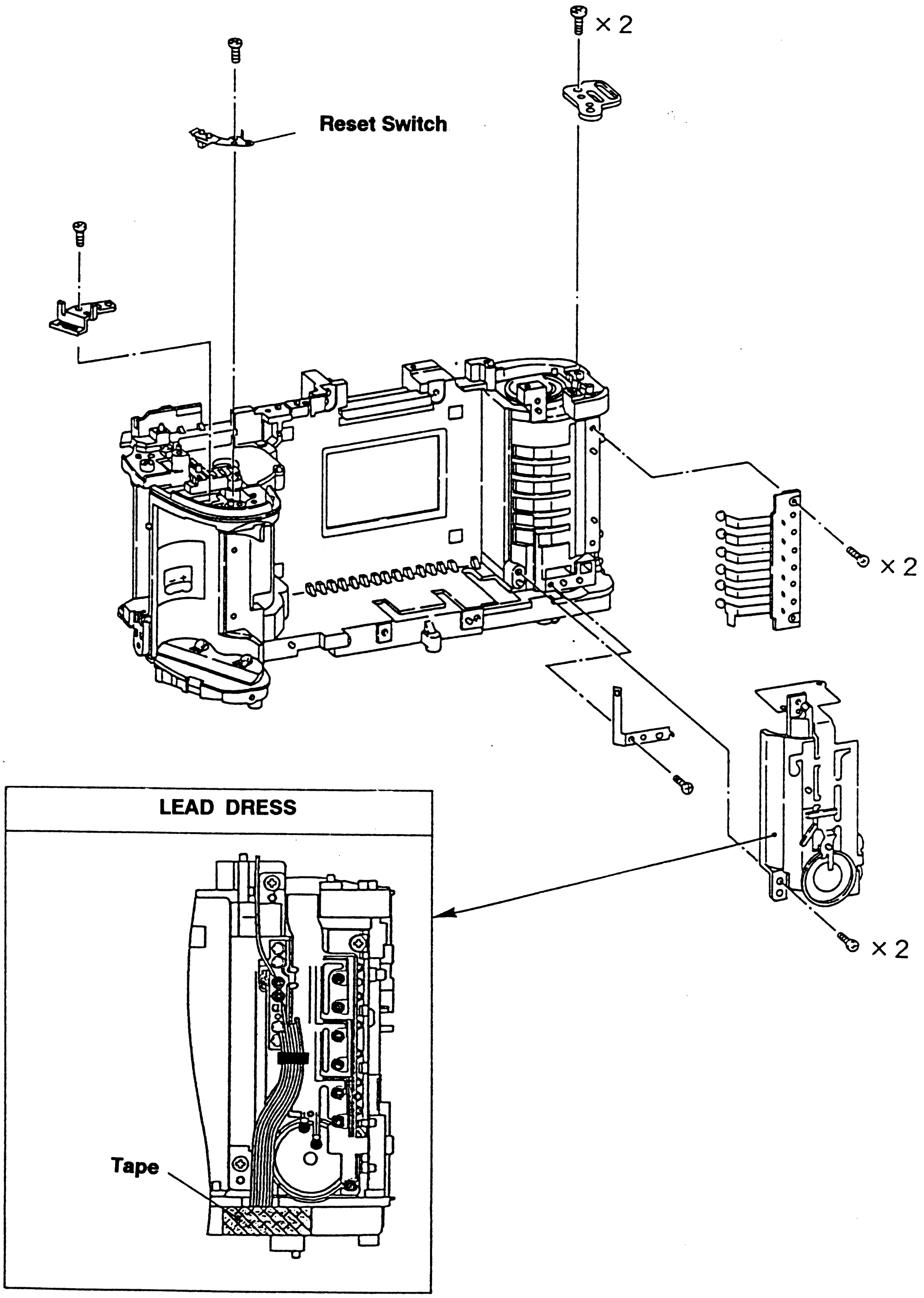
# Mirror Box Disassembly III


Logenest Lambda A-74
on seven studs
Bright Screws
× 3
Logenest Lambda A-74
× 2
Bright Screws: Stake
heads with ARONTITE L
Timing Marks
Mirror Cam
Gear
Shutter Cam
Gear
Gear Timing
Lube: Logenest Lambda A-74
Wipe patern with alcohol
when installing

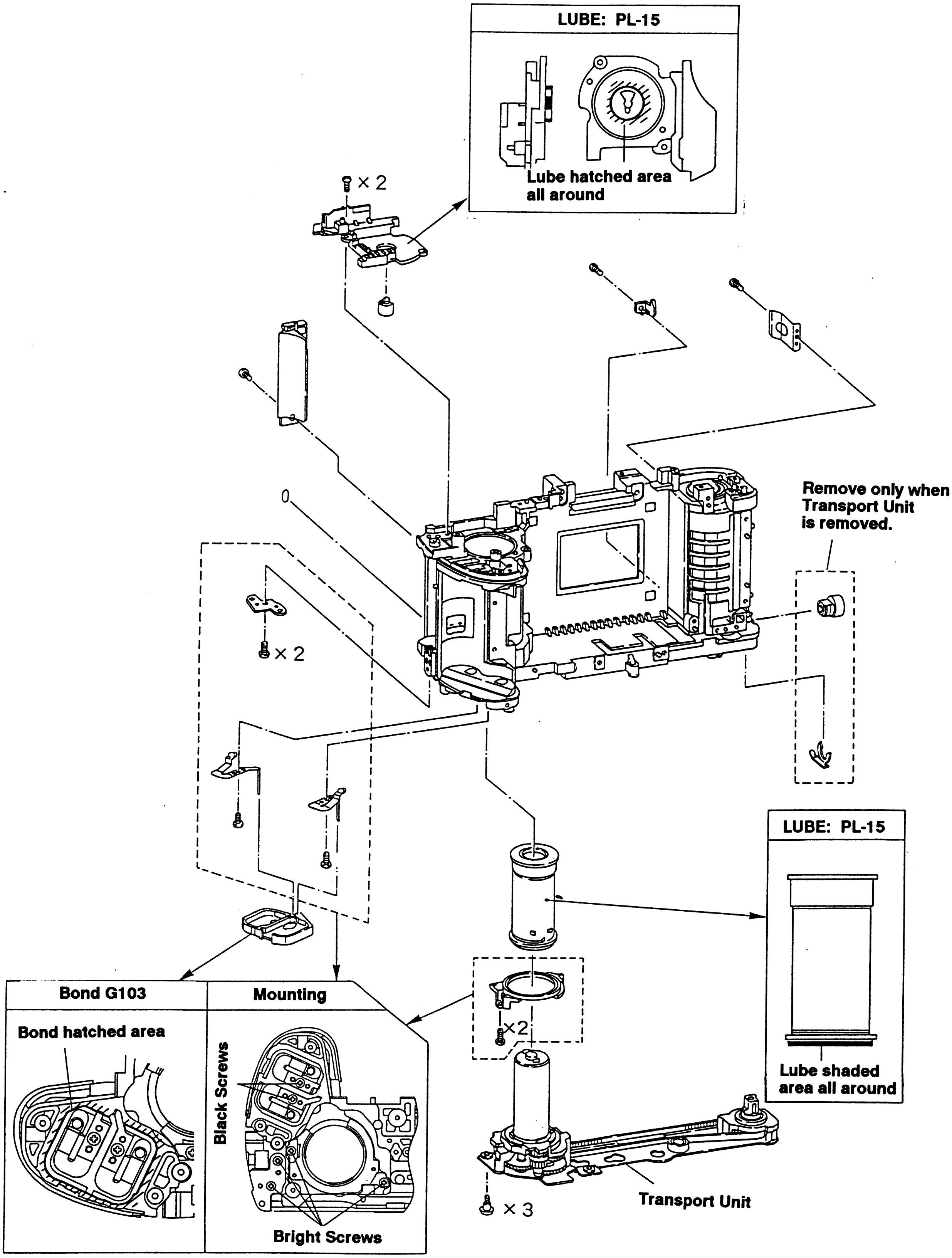
# Mirror Box Disassembly II


Mount Side
Assembly Position
Fix pentaprism with Silicone bond KE347B.
3 BOND 1401B
Bond positioning pins
× 5
Double-faced tape
× 2
▨ Lube: Logenest Lambda A-74
IF-10 on hatched area of springs
FFD Adjustment Shims
FFD Parallism Adjustment Washer
Standard thickness and shaved Service Mounts are available

# Body Disassembly I


× 2
Reset Switch
× 2
× 2
LEAD DRESS
Tape

## Body Disassembly II


LUBE: PL-15
Lube hatched area all around
× 2
Remove only when Transport Unit is removed.
× 2
LUBE: PL-15
Lube shaded area all around
×2
× 3
Transport Unit
Bond G103
Bond hatched area
Mounting
Black Screws
Bright Screws

## MEMO

# SUB MIRROR (41.5°) ADJUSTMENT

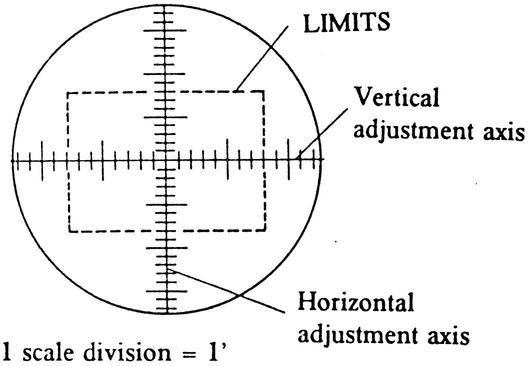
♠ This adjustment is necessary if the mirror box, sub-mirror bumper, either hinge plate or the mirror unit is disassembled or replaced. (In this model, main mirror angle adjustment is not required.)

## Purpose

To insure that the sub-mirror is correctly aligned. The vertical adjustment is required. Horizontal position need only be checked.

## Tools

90° Collimator - 3
0.05"(1.27mm) Allen (hex key) wrench
Sub-mirror gage (41.5°)


LIMITS
Vertical adjustment axis
Horizontal adjustment axis
1 scale division = 1'

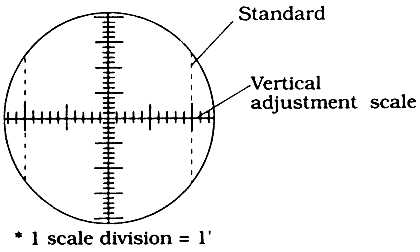
## Standard

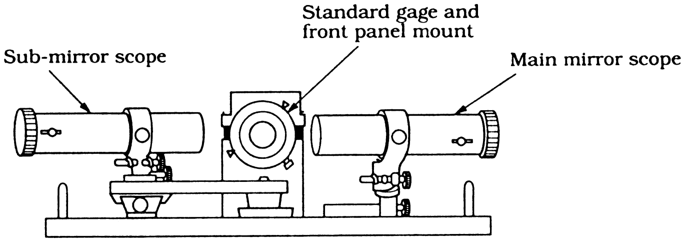
- Vertical: 41.5° + 2' -6'
- Horizontal: 41.5° ± 10'

Horizontal alignment is checked only.

## Preparations

Attach the sub-mirror gage (41.5°) and align the collimator as outlined in the collimator instructions.


Standard
Vertical adjustment scale
* 1 scale division = 1'


Standard gage and front panel mount
Sub-mirror scope
Main mirror scope

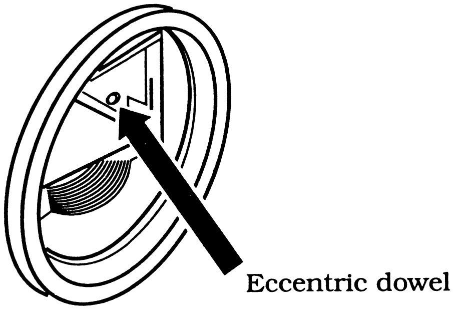
Universal 90° Collimator-3

## Adjustment

1. Attach the mirror box, with the AF sensor removed, but the mirror unit in place, to the collimator.

2. Insert the allen wrench into the access hole and adjust the sub mirror.

3. Hook the power leads from the power supply to the unit as shown in figure 2 on the preceding page and apply two to three volts for several seconds so the mirror cycles up and down once. Check the adjustment, and repeat if necessary.


Eccentric dowel

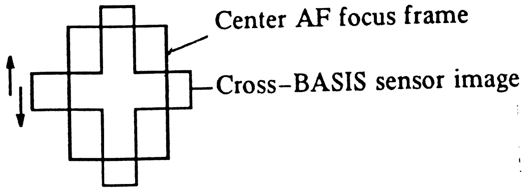
# AF SENSOR POSITIONING (Horizontal)

♠ This adjustment is necessary if the AF sensor is disturbed. Except for being on the opposite axis, the adjustment is similar to the previous EOS cameras.

## Purpose

To insure that the AF sensor is correctly aligned to the optical axis. This is a horizontal adjustment only. The vertical position is determined by parts fit.

## Tools



EF50mm *f*/1.8 production lens
Point light source (penlight, etc.)

## Standard

Adjust so the image of the central cross-BASIS sensor is as close to centered in the center focus frame as possible. It must fall within the frame.

## Preparations

1. Use one of the listed EOS bodies to stop down the EF lens to *f*/8.

   • When the EOS 5 or 10 is used, :Set custom function CF-11 to '1'.(or Y) Set manual mode and set the aperture to *f*/8. Hold the AE lock button down and remove the lens from the camera.

   • When an EOS-1/EOS 600 series camera is used, set camera in manual mode and the aperture to *f*/8. Hold the depth-of-field button down and remove the lens from the camera.

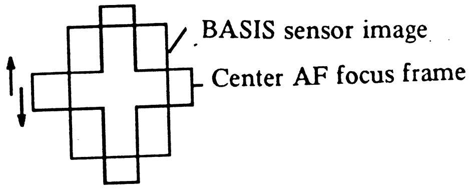
2. Set the lens to manual and the focusing ring to ∞ for the clearest image of the focus frame.

## Adjustment

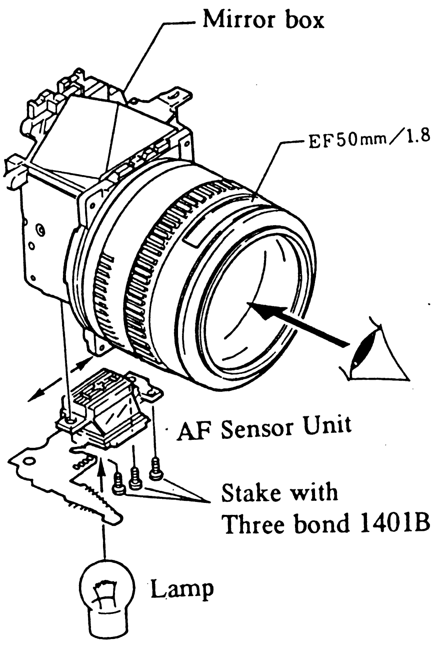
1. Install the AF sensor on the mirror box, with mirror and focusing screen installed. Lightly tighten the sensor mounting screws. Install the lens on the mirror box.

2. Shine the light source through the AF sensor. Look through the lens and the image should look like figure 1.

3. If necessary, adjust the sensor position so the cross sensor is centered in the focus frame.



4. Cinch down the screws a little more, but not too much. and stake their heads with Three bond 1401B. (Tightening the screws too much can deform the sensor.)



# FLANGE to FOCAL PLANE DISTANCE ADJUSTMENT

♠ This adjustment is necessary if the mirror box or mount has been changed. Always follow this adjustment with the flange to focusing screen distance adjustment.

## Purpose

To adjust the flange to pressure plate distance to the system standard to insure lens interchangeability.

## Tools

Dial gage set (44.14mm or 42.14 set plus 2mm adaptor ring)

## Standard

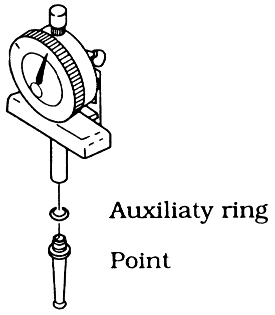
44.14 ± 0.03mm to outer rails with optical flat

44.17 ± 0.03mm to center of pressure plate
(This data is used for AF accuracy adjustment
in the electrical adjustments.)

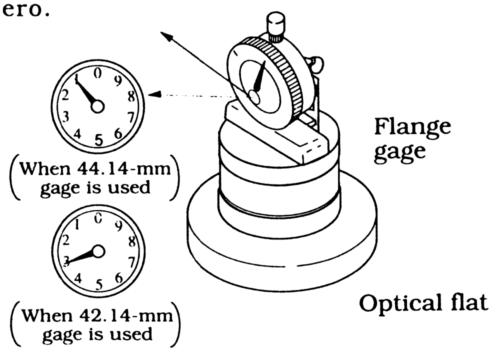
## Preparations

1. Use the 44.14mm block gage if available. If not, use the 42.14mm gage, but install the 2mm adaptor between the dial gage and point as shown in figure one (the same point is used for both FD and EF lensed bodies).

2. If you are using the 42.14mm block gage, remember the different "zero" point (Fig. 2). Check the position of the needle on the small dial and set the large dial to '0'.



Check that the small scale indicates as shown in the figure below. Then adjust the outside scale to zero.

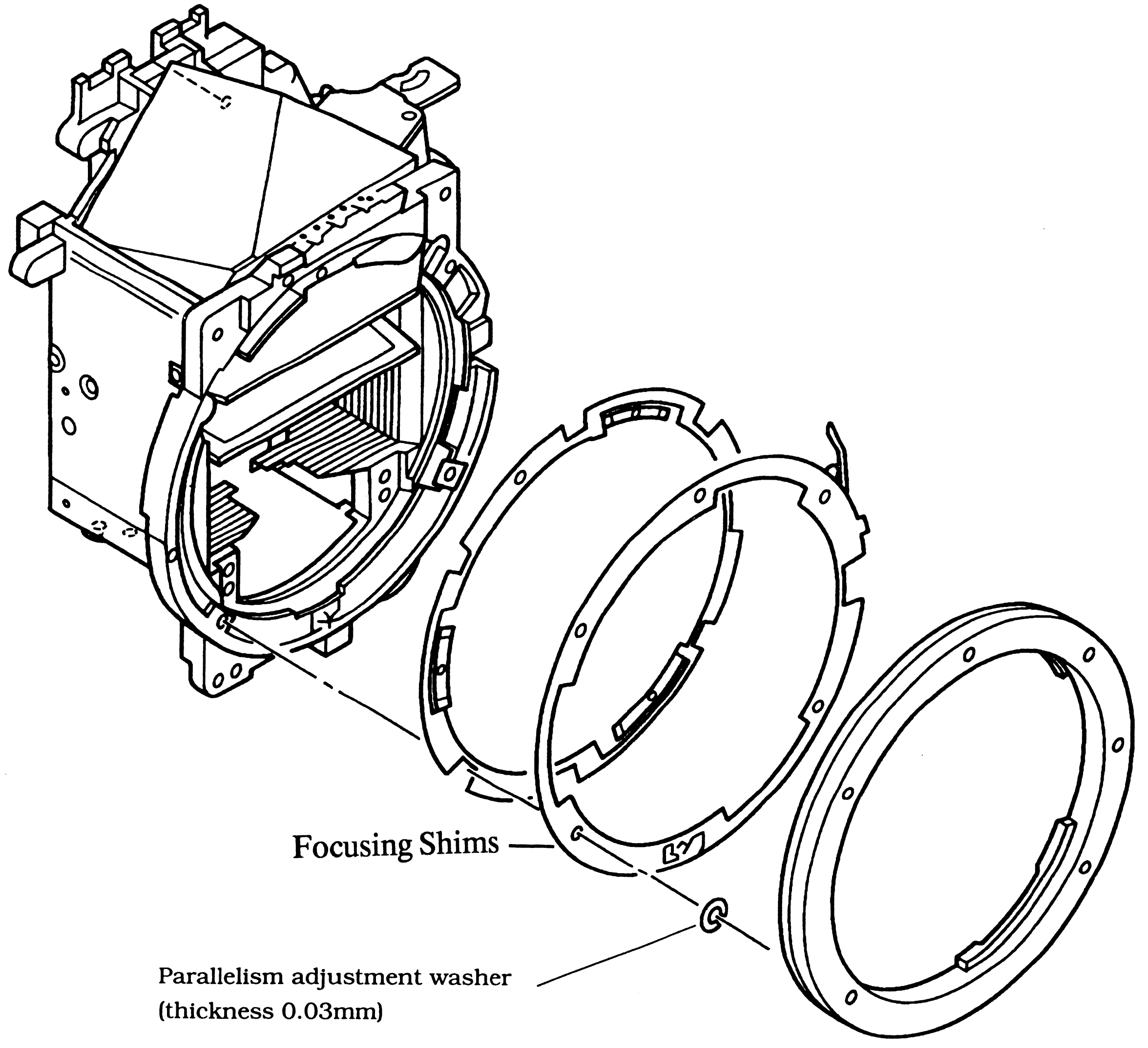


## Adjustment

1. Set the camera to 'bulb', open the shutter and remove the battery. The shutter will remain over.

2. Place the dial gage on the mount and measure the FFD.

3. Adjust by adding or removing focus washers. If the error is positive and there are no washers installed, install the special -1mm service mount and add washers to adjust.


Focusing Shims
Parallelism adjustment washer
(thickness 0.03mm)

# FLANGE to FOCUSING SCREEN DISTANCE ADJUSTMENT

♠ This adjustment is necessary if the flange to focal plane distance adjustment has been performed.

## Purpose

To insure that the FFD and FFS distances correspond.

## Tools

- Production EF50mm *f*/1.8 lens
- Magnifier AD-S

## Adjustment

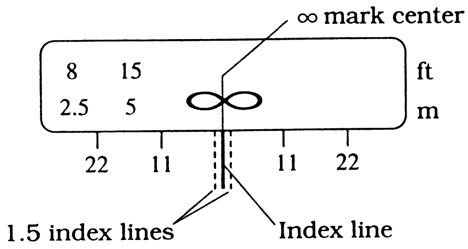
**1.** Install the magnifier on the eyepiece and adjust it to your eyesight. (The lens should not be installed at this point.)

- Procedure

Aim the camera at a bright subject (white wall or light box) about EV 12 and turn the ring until the focusing frame is a sharp as possible.

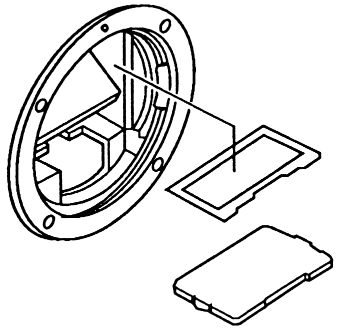
**2.** Install the lens, set to manual, and set it to infinity. Then place the dial gage on the mount and measure the FFD. (Up to ± 0.75 index line width is acceptable.)

**3.** Find a sharp edged target at least 250 meters distant. Change finder focus washers so the target is as sharp as possible.

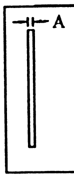


- Focus Washer Replacement

Pull the focusing screen down and the focus washer will come out with the screen.



Focusing washers



| A | | SIZE |
|---|---|---|
| 0.20mm | ±0.020mm | (020) |
| 0.25mm | ±0.025mm | (025) |
| 0.30mm | ±0.025mm | (030) |
| 0.35mm | ±0.025mm | (035) |
| 0.40mm | ±0.030mm | (040) |

# ELECTRICAL ADJUSTMENTS

## INTRODUCTION

### File Names

This model is sold under four different names: EOS 5, EOS 5QD, EOS A2 and EOS A2E. since a file name can have only eight character, we have standardized software file names.

| | |
|---|---|
| Main adjustment software file name: | EOS5 |
| Eye-controlled focus adjustment software file name: | EOS5EYE |

Our appologies to the North American service personell for this inconvience.

- The following electrical adjustments can be made with the EOS5 main adjustment software..

| | |
|---|---|
| Shutter adjustment: | Adjusting shutter speeds. |
| SPD positioning: | Positioning IC1 (AE IC). |
| AE accuracy adjustment: | Adjusting data output of IC1 (AE IC). |
| AF basic adjustment: | Adjusting data output of BASIS. |
| AF focus adjustment: | Adjusting focus data obtained from data output of BASIS. |
| Flash adjustment: | Adjusting the data output of the flash sensor. |
| Inhibit voltage adjustment: | Adjusting inhibit voltage for the camera. |
| Temperature correction: | Correcting data output of the temperature sensor. |
| AE shift: | Biases exposure to suit user preference. |
| Sensor data output: | Displaying data output from BASIS to check AF accuracy. |
| Focus data output: | Displaying focus data to check AF accuracy. |
| AF focus shift: | Correcting slight AF focus errors resulting from use of a lens with certain lenses (EF50mm f/1.0L, EF 85mm f/1.2 L, EF 50mm f/1.8, and EF 135mm f/2.8SF). Do not use this procedure for ordinary focus adjustment. |
| Self check: | Checking the liquid crystal displays (LCD), the beeper, and lens data communications. |
| Data transfer: | Initializing, storing, or transferring camera data. |

- The following electrical adjustments can be made with the Eye-controlled Focus Adjustments (EOS 5 EYE Adjustment Software EOS5EYE)

| | |
|---|---|
| CCD Output Level Adjustment | Adjusting the output level of the Eye-controlled Focus CCD. |
| Eye-relief Adjustment | This adjustment compensates for variations in the physical placement of the eyeball illuminating IREDs. Two adjustments are necessary for the different distances between aided and unaided eyes. |
| IRED Image Output | This function is used to check the output of the four IREDs (1 - 4). |
| Data transfer: | This function stores, or reloads camera data. |

# ADJUSTMENTS after PARTS REPLACEMENT

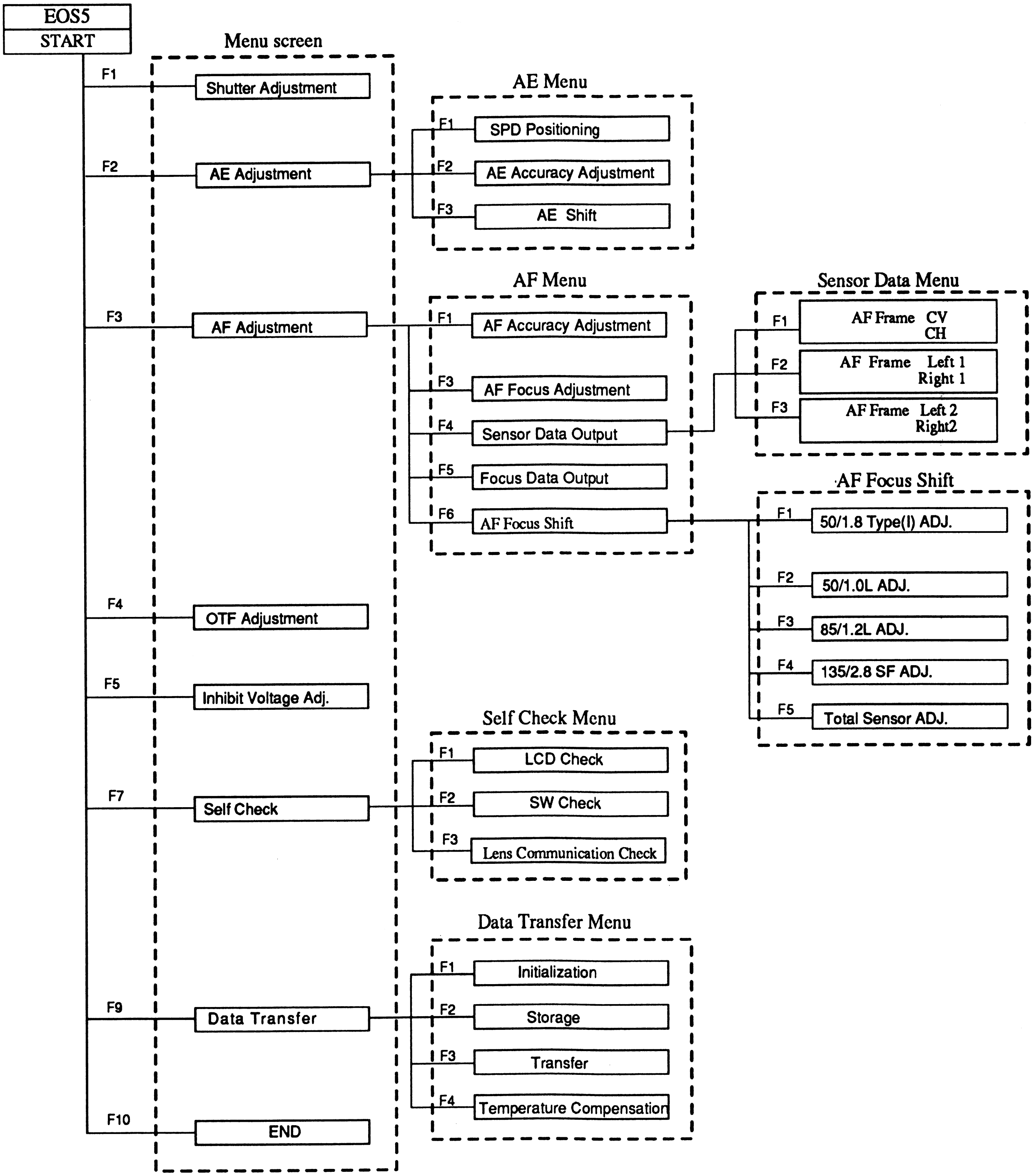
The following table lists the order of adjustments necessary after parts have been replaced, or disturbed in the case of the AF Unit and the AE-IC (SPD).

| ADJ. | INITIALIZE | TEMP. COMP. | INHIBIT VOLT. | SHUTTER ADJ. | AE | | | AF | | | OTF | CCD Out ADJ. | Eye Relief ADJ. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | SPD | ACCUR. | SHIFT | ACCUR. | FOCUS | FOCUS SHIFT | | | |
| AE IC | | | | | 1 | 2 | ▲ | | | | | | |
| Main Flex (Data not readable) | 1 | 2 | 3 | 4 | 5 | 6 | ▲ | 7 | 8 | | 9 | 10 | 11 |
| Main Flex (Data readable) | | 1 | 2 | 3 | 4 | 5 | ▲ | 6 | 7 | | 8 | | |
| AF Unit | | | | | | | | 1 | 2 | | | | |
| Shutter Unit | | | | 1 | | | | | | | | | |
| Mirror Unit | | | | | | | | | 1 | | | | |
| Eye-controlled Focus Unit | | | | | | | | | | | | 1 | 2 |

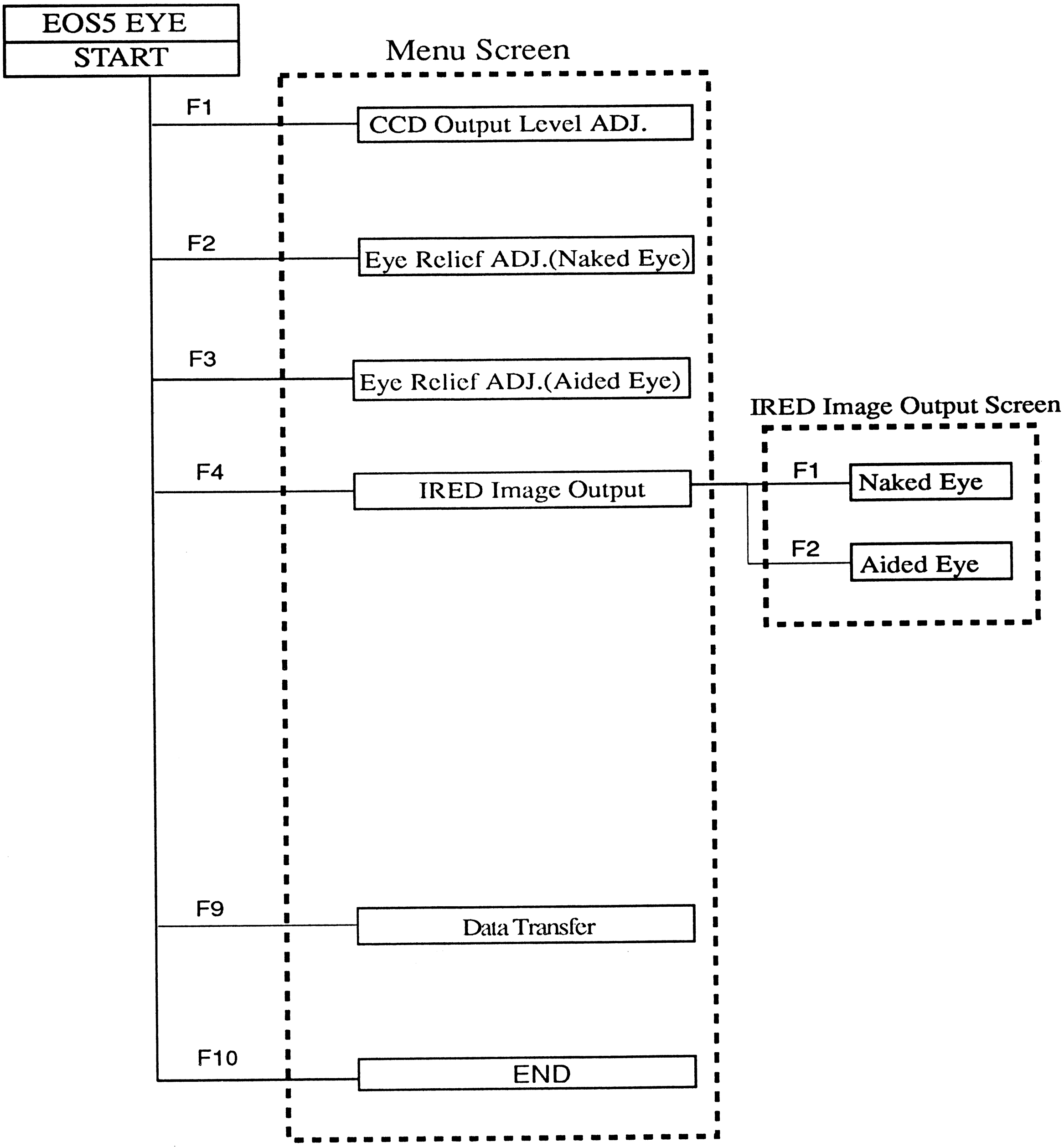
(Note) Items marked ▲ are optional.

# ADJUSTMENT ITEMS TABLE

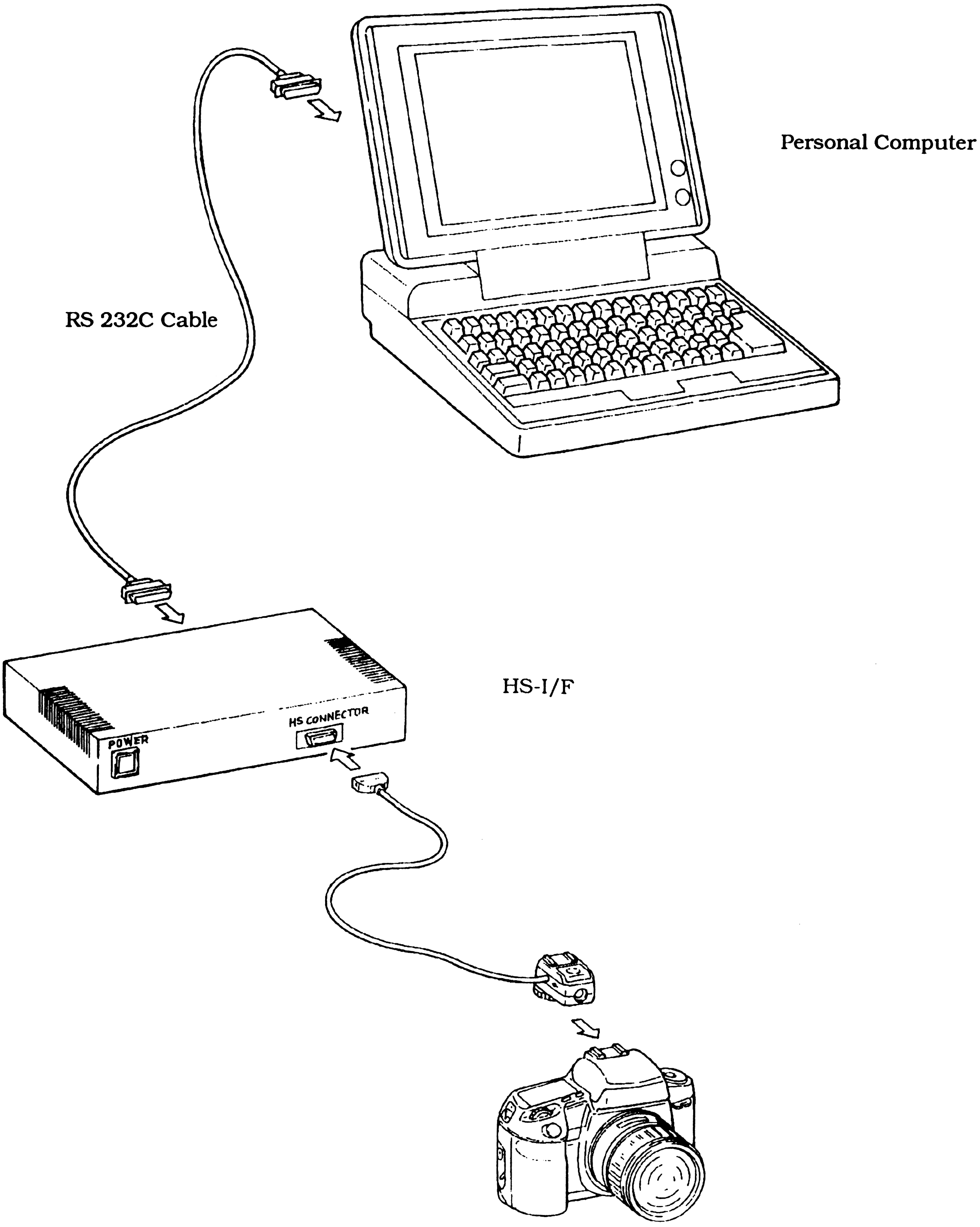
## EOS5 Adjustment Software


EOS5
START
Menu screen
F1
Shutter Adjustment
F2
AE Adjustment
F3
AF Adjustment
F4
OTF Adjustment
F5
Inhibit Voltage Adj.
F7
Self Check
F9
Data Transfer
F10
END
AE Menu
F1
SPD Positioning
F2
AE Accuracy Adjustment
F3
AE Shift
AF Menu
F1
AF Accuracy Adjustment
F3
AF Focus Adjustment
F4
Sensor Data Output
F5
Focus Data Output
F6
AF Focus Shift
Sensor Data Menu
F1
AF Frame CV CH
F2
AF Frame Left 1 Right 1
F3
AF Frame Left 2 Right2
AF Focus Shift
F1
50/1.8 Type(I) ADJ.
F2
50/1.0L ADJ.
F3
85/1.2L ADJ.
F4
135/2.8 SF ADJ.
F5
Total Sensor ADJ.
Self Check Menu
F1
LCD Check
F2
SW Check
F3
Lens Communication Check
Data Transfer Menu
F1
Initialization
F2
Storage
F3
Transfer
F4
Temperature Compensation

## EOS5 EYE Adjustment Software


EOS5 EYE
START
Menu Screen
F1
CCD Output Level ADJ.
F2
Eye Relief ADJ.(Naked Eye)
F3
Eye Relief ADJ.(Aided Eye)
F4
IRED Image Output
IRED Image Output Screen
F1
Naked Eye
F2
Aided Eye
F9
Data Transfer
F10
END

# CONNECTING THE CAMERA TO THE PERSONAL COMPUTER


Personal Computer
RS 232C Cable
HS-I/F
POWER
HS CONNECTOR

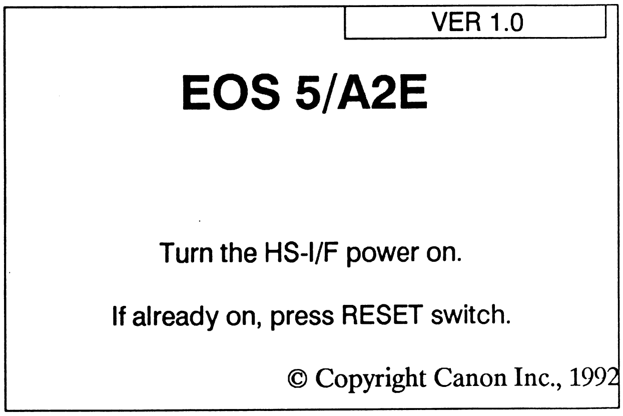
# MAIN ADJUSTMENT START-UP PROCEDURES

**Caution:**

Do not connect the camera to the personal computer before turning on the HS-I/F (to prevent the camera from malfunctioning).
There are two different adjustment software programs, one for the main adjustments (EOS5) and the other (EOS5EYE) for the eye-controlled focus adjustments.

1. Load the work disk for the main adjustment program *(file name: EOS5)* in the personal computer, then turn it on. If the personal computer is already turned on, load the work disk and press the reset switch.

2. After a while, the title screen appears as shown at the right. Turn on the HS-I/F in accordance with the directions displayed on the screen. If HS-I/F has already been turned on, turn it off once and then turn it on.



VER 1.0

**EOS 5/A2E**

Turn the HS-I/F power on.

If already on, press RESET switch.

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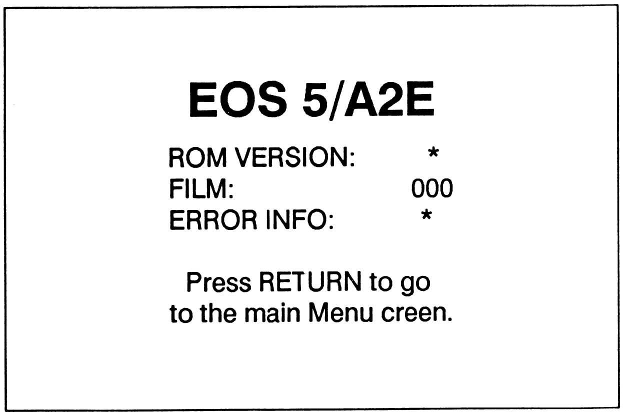
3. Upon establishment of communications between the personal computer and HS-I/F, the screen shown at the right appears. Connect the camera to HS-I/F. Then, turn on the main switch and then SW1 on the camera.

4. Upon establishment of communications between the personal computer and the camera, ROM version number, number of films transported, and the most recent error information appear as shown. If you do not need to check the possible causes of the error, press the Return key to display the main menu screen.

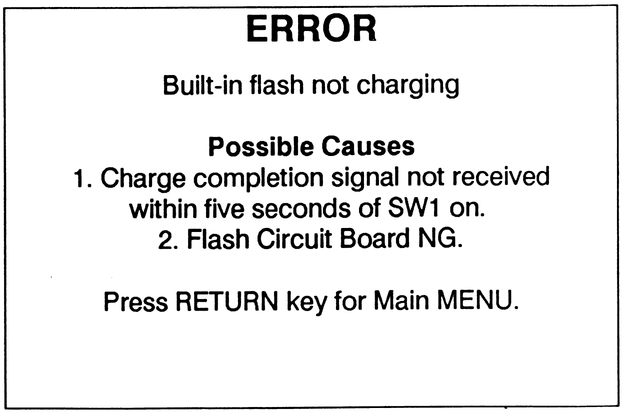


**EOS 5/A2E**

ROM VERSION: *
FILM: 000
ERROR INFO: *

Press RETURN to go
to the main Menu creen.

5. To view the possible error causes, press the SPACE bar. A screen similar to the one at the right will be displayed. When you have finished, press the Return key to display the main menu screen.



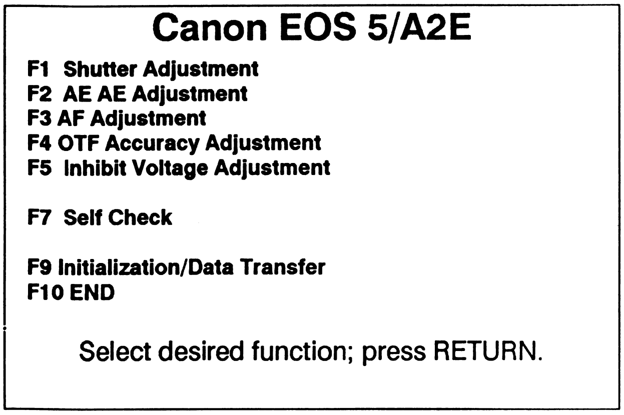
**ERROR**

Built-in flash not charging

**Possible Causes**
1. Charge completion signal not received within five seconds of SW1 on.
2. Flash Circuit Board NG.

Press RETURN key for Main MENU.

6. Move the cursor to select the desired adjustment item on the main menu screen.The screen at right is for the main adjustment software.



```
Canon EOS 5/A2E
F1  Shutter Adjustment
F2  AE AE Adjustment
F3 AF Adjustment
F4 OTF Accuracy Adjustment
F5  Inhibit Voltage Adjustment

F7  Self Check

F9 Initialization/Data Transfer
F10 END

Select desired function; press RETURN.
```

**Note :** Adjustment Software Errors

The adjustment software may cause an error for some reason. In this event, turn off the camera (to clear the error from the camera). If the adjustment software causes an error during adjustment of the camera, be sure to readjust the camera after recovering from the error.

# SHUTTER ADJUSTMENT

Shutter adjustment must always be done when replacing the shutter unit. Shutter adjustment is also required if camera data could not be transferred to the disk before replacing the main flex. Otherwise, the shutter adjustment is not necessary.

**Purpose**

To adjust shutter speeds.
If the maximum shutter speed (1/8000sec.) is within the limits all shutter speeds have been adjusted.

**Standard**

SHUTTER SPEED standard

| | |
|---|---|
| Marked shutter speed: | 1/8000 ( Actually 1/6500) |
| Exposure time: | 0.154ms |
| Limits: | 0.096 - 0.253ms |

Shutter CURTAIN TRAVEL TIME standard

| | |
|---|---|
| 1st curtain travel time: | 3.2 ± 0.1ms |
| 2nd curtain travel time: | 3.2 ± 0.1ms |

**Caution**

Check that the shutter curtain travel times conforms to the standard. If not, replace the shutter unit.

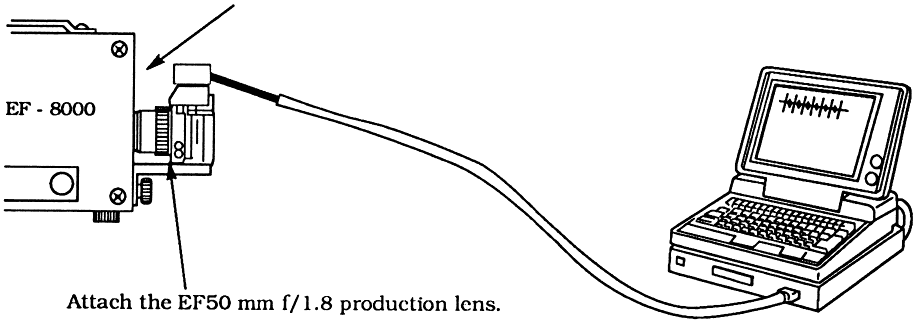
**Tools**

Personal computer
RS-232C cable
HS-I/F
Regulated DC powers supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000
EF50mm f/1.8 production lens

**Preparation**

1) Start adjustment program (see “Start-up procedures”), connect the camera to the personal computer, and select “Shutter Adjustment” on the menu screen.

2) Attach the EF50mm f/1.8 lens to the camera, set TV = 8000 and AV = 1.8 in the manual mode, and set the camera on the EF-8000. Set the light source to LV15..

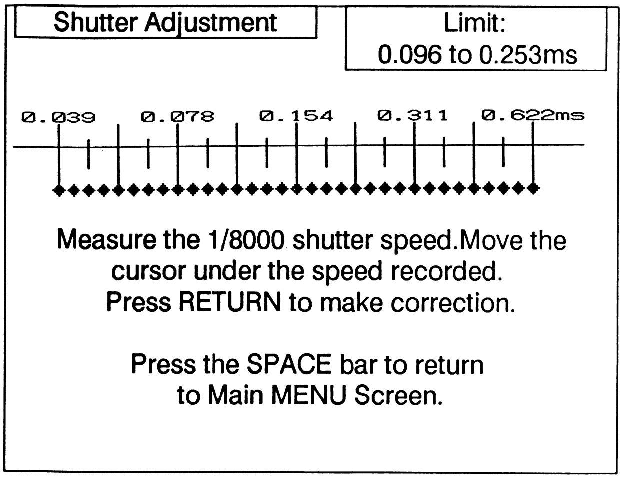


Set the brightness of EV 15.

Attach the EF50 mm f/1.8 production lens.

## Procedure

1) Measure the shutter speed and move the cursor under the measured value. Press the Return key and then SW1 on the camera to establish communications between the two to rewrite camera data.



Shutter Adjustment

Limit:
0.096 to 0.253ms

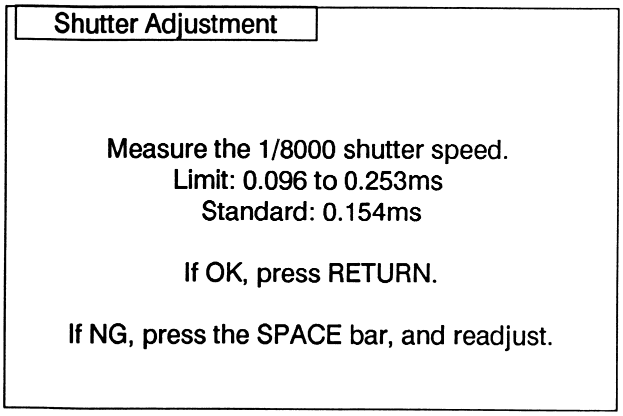
0.039 0.078 0.154 0.311 0.622ms

Measure the 1/8000 shutter speed.Move the
cursor under the speed recorded.
Press RETURN to make correction.

Press the SPACE bar to return
to Main MENU Screen.

2) After completion of the communications, measure the shutter speed again to check whether it conforms to the standard.

If not, press the Space bar and return to step 1).



Shutter Adjustment

Measure the 1/8000 shutter speed.
Limit: 0.096 to 0.253ms
Standard: 0.154ms

If OK, press RETURN.

If NG, press the SPACE bar, and readjust.

# X Time Lag Check

**Tool** EF-8000 or FS-5300

**Standard**

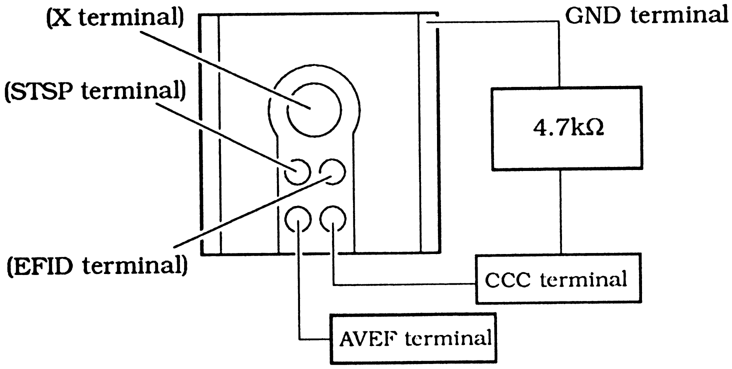
Shutter speed: 1/200sec.
Line A: 0.35ms or over
Line B: 1.65ms or over

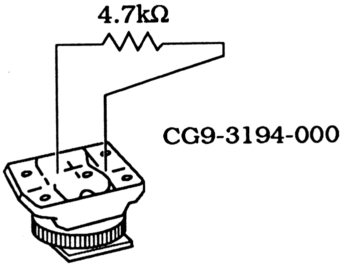
**Procedure**

1) Set the shutter to the flash sync speed of 1/200 in the TV mode or manual mode.

2) Mount a compatible flash or a hot shoe unit (CG9-3194-000) with a 4.7 KΩ resistor from the CCC terminal to ground.

3) Test with EF-8000/FS5300, and checks lines A and B.


(X terminal)
(STSP terminal)
(EFID terminal)
GND terminal
4.7kΩ
CCC terminal
AVEF terminal


4.7kΩ
CG9-3194-000

# AE ADJUSTMENT

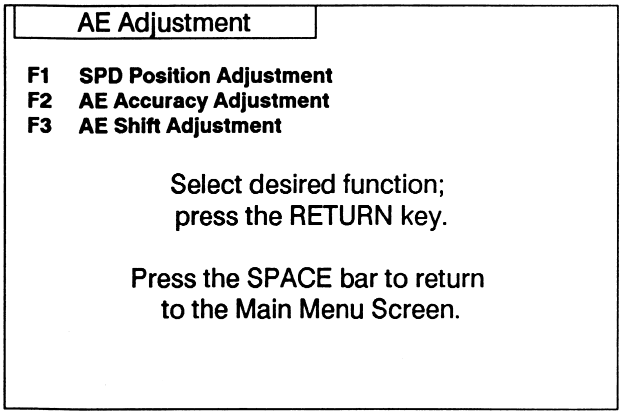
The AE adjustments consist of the electrical level, gain, and offset adjustments, and the physical positioning of the SPD photosensor which is an integral part of the AE-IC.

| | | |
|---|---|---|
| **1.** | SPD positioning: | Aligning the center of SPD (AE-IC) with the optical axis of the camera. |
| **2.** | AE accuracy adjustment: | Adjusting the output level, gain, and offset of SPD (AE-IC). |
| **3.** | AE shift: | This procedure shifts the exposure level. It is used when the customer's perception of "correct exposure" does not concur with Canon's standard. |

If the position of the AE-IC has been distrubed, the SPD positioning must be performed bofore doing the AE accuracy adjustment. AE shift, if used, must always be done last.

**1)** Start the adjustment program, connect the camera to the personal computer, and select "AE Adjustment" on the menu screen to display the AE menu screen shown at the right.

Select the desired AE adjustment item on the menu screen with the function key or the cursors.



AE Adjustment

**F1 SPD Position Adjustment**
**F2 AE Accuracy Adjustment**
**F3 AE Shift Adjustment**

Select desired function;
press the RETURN key.

Press the SPACE bar to return
to the Main Menu Screen.

# SPD (AE IC)Positioning

The SPD must always be positioned when the SPD is disturbed, regardless of whether or not the camera data was transfered prior to replacing the main flex. SPD positioning must always be accompanied by AE accuracy adjustment because the position of SPD affects the accuracy of AE.

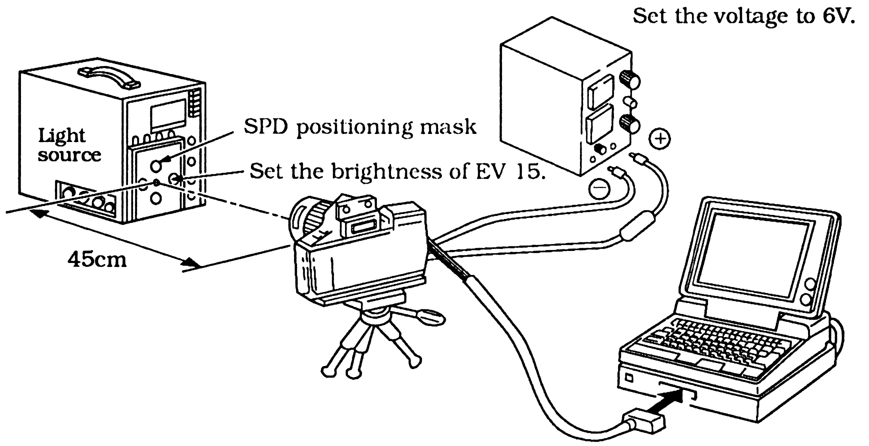
| | |
|---|---|
| **Purpose** | To align the center of SPD with the optical axis of the camera. |
| **Caution** | Do not expose SPD to any light other than the light source in a dark room. |
| **Tools** | Personal computer<br>RS-232C cable<br>HS-I/F<br>Regulated DC power supply<br>Tool battery<br>Adjustment software (stored on a work disk)<br>EF-8000 or EF-500<br>EF50 mm f/1.8 production lens<br>Tripod<br>SPD positioning mask |

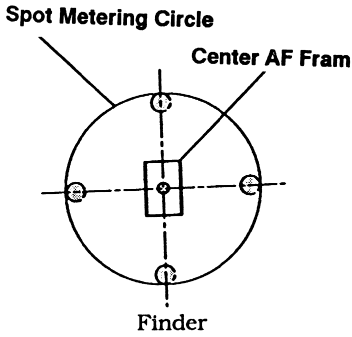
## Preparation

1) Attach the EF50 mm f/1.8 production lens to the camera and fix the camera, on the tripod, aimed toward the light source.

2) Attach the SPD positioning mask to the light source of EF-8000 (or EF-500) and set the brightness of LV15.

3) Set the camera 72cm away from the SPD positioning mask and align the center of the SPD positioning mask with that of the range measuring frames in the finder. Set the lens manually at 72cm.


Set the voltage to 6V.
Light source
SPD positioning mask
Set the brightness of EV 15.
⊕
⊖
45cm


Spot Metering Circle
Center AF Fram
Finder

## Procedure

1) Select "SPD Positioning" on the AE menu screen. Then, approximate EV values of individual photometric sensors of the SPD will be displayed.

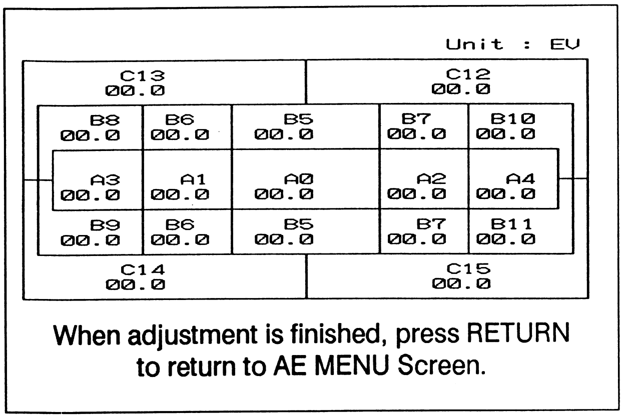
2) Shield the lower four holes from light as shown in Figure 1 and read the EV of sensor A0.

3) Shield the left, upper, and then right four holes sequentially from light as shown in Figure 2 and read the EV of sensor A0 at each position of the shield.

4) Position the SPD so that the EV's fall within two stops.

5) After positioning the SPD, fix the SPD holder with instant adhesive agent.

- After installing the cover, repeat steps 2) and 3).



Unit : EV

| | | | | |
|---|---|---|---|---|
| C13<br>00.0 | | | C12<br>00.0 | |
| B8<br>00.0 | B6<br>00.0 | B5<br>00.0 | B7<br>00.0 | B10<br>00.0 |
| A3<br>00.0 | A1<br>00.0 | A0<br>00.0 | A2<br>00.0 | A4<br>00.0 |
| B9<br>00.0 | B6<br>00.0 | B5<br>00.0 | B7<br>00.0 | B11<br>00.0 |
| C14<br>00.0 | | | C15<br>00.0 | |

When adjustment is finished, press RETURN to return to AE MENU Screen.

Figure 1

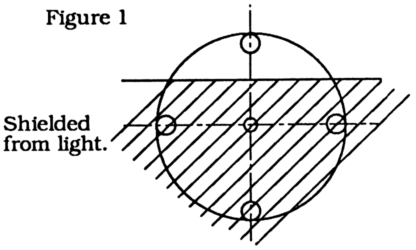
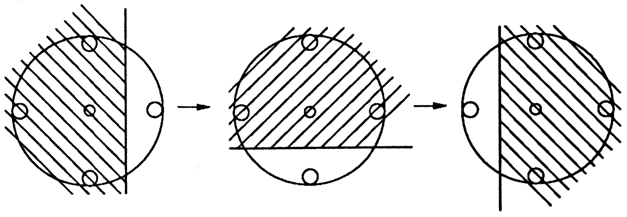
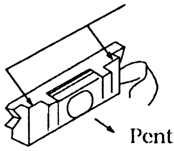


Figure 2



Fixed with instant adhesive agent after SPD potitioning.



Pentaprism box

# AE Accuracy Adjustment

AE accuracy adjustment must always be made when the SPD is disturbed, or if it is impossible to store or transfer camera data before replacing the main flex. Otherwise, AE accuracy adjustment is unnecessary.

**Purpose**

To adjust the output level, gain, and offset of SPD.

**Standard**

| Light source | Image Plane Exposure Value |
|---|---|
| *LV9* | *0 +/- 0.5 EV* |
| *LV12* | *0 +/- 0.5 EV* |
| *LV15* | *0.5 +/- 0.5 EV* |

**Caution**

AE accuracy adjustment must always be preceded by shutter adjustment and SPD positioning. AE accuracy also requires a correctly cabrated light source.

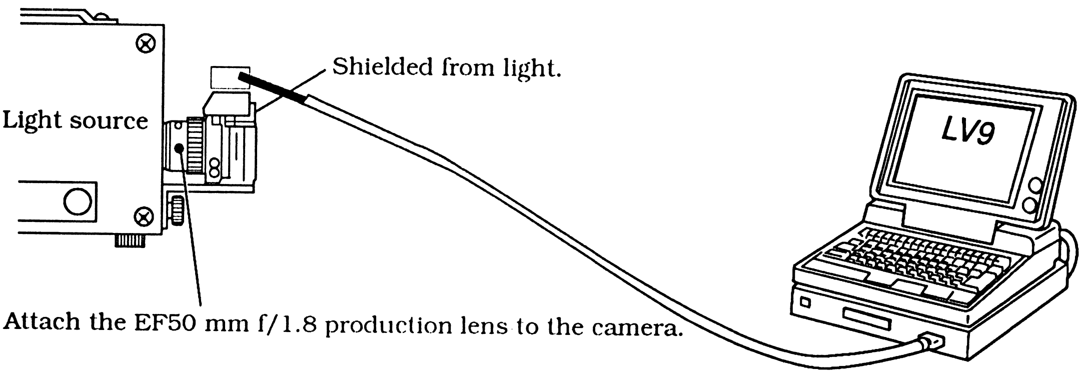
| | | |
|---|---|---|
| LV9 | 64cd/m$^2$ | K value = 12.5 |
| LV12 | 512cd/m$^2$ | K value = 12.5 |
| LV15 | 4096cd/m$^2$ | K value =12.5 |

**Tools**

Personal computer
RS-232C cable
HS-I/F
Regulated DC power supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000 or EF-500
EF50 mm f/1.8 production lens

**Preparation**

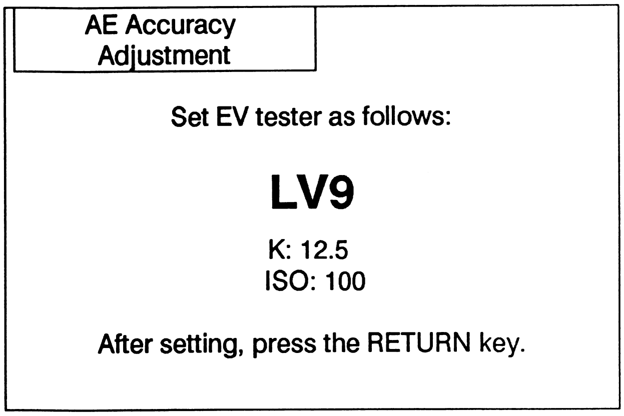
Attach the EF50mm f/1.8 production lens to the camera and direct it toward the light source of the EF-8000 (or EF-500) with the camera's eyepiece shielded from light so that it will not be affected by external light.



## Procedure

1) Select AE Accuracy Adjustment on the AE menu screen.

2) Place the camera on the tester stand. Set the light source to and press the RETURN key.


AE Accuracy Adjustment

Set EV tester as follows:

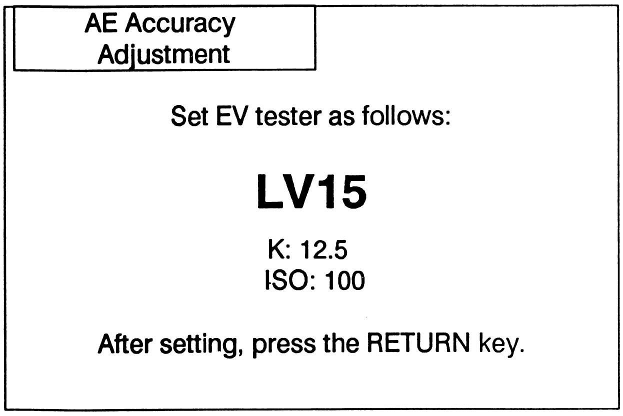
**LV9**

K: 12.5
ISO: 100

After setting, press the RETURN key.

3) When this screen appears, reset the light source to LV15 and press the RETURN key.

4) Confirm that communications between the camera and the personal computer are established to change camera data.


AE Accuracy Adjustment

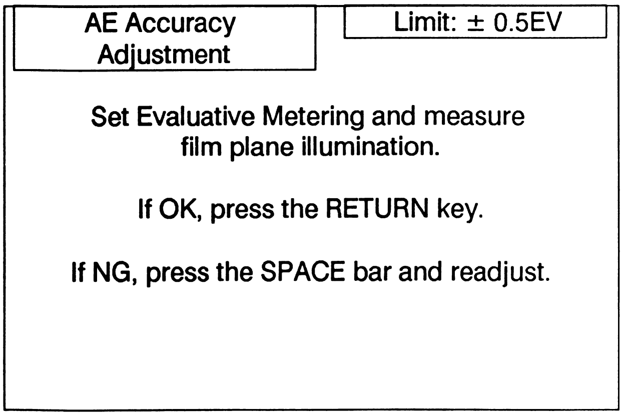
Set EV tester as follows:

**LV15**

K: 12.5
ISO: 100

After setting, press the RETURN key.

5) After completion of the communications, check whether AE accuracy conforms to the standard under the light sources with the brightness of LV9, LV12, and LV15. If not, return to step 1).


AE Accuracy Adjustment

Limit: ± 0.5EV

Set Evaluative Metering and measure film plane illumination.

If OK, press the RETURN key.

If NG, press the SPACE bar and readjust.

# AE Shift

AE shift is intended to shift the center exposure to the user's preference. Whereas AE accuracy adjustment adjusts the output level, gain, and offset of SPD, AE shift adjusts only the level.

## Tools

Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000 or EF-500
EF50mm f/1.8 production lens

## Preparation

In the same manner as AE accuracy adjustment, attach the EF50 mm f/1.8 production lens to the camera and direct it toward the light source with its eyepiece shielded. (See AE Accuracy Adjustment .)

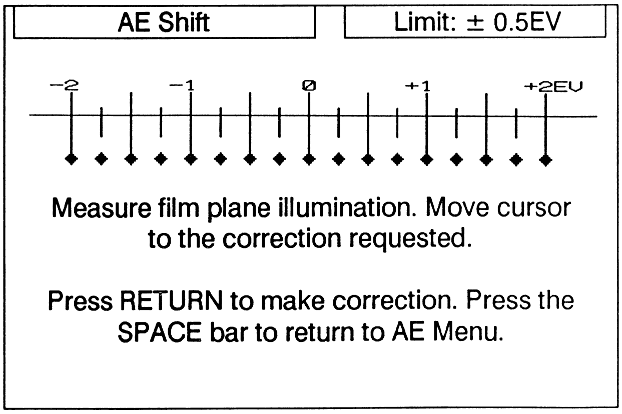
## Procedure

1) Select "AE Shift" on the AE menu screen.

2) Move the cursor to select the desired amount of shift.

Exposure can be incremented in about 0.25 stops. For example, to increment exposure by 1 stop, press the curson keys to move the cursor to the position of +1.

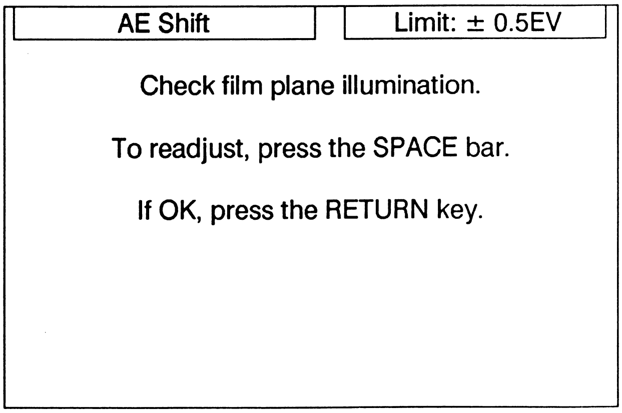
- To increment or decrement exposure by 2 or more stops, press the cursor keys to move the cursor to the position of +2 or -2 and press the RETURN key to establish communications between the personal computer and the camera. When the confirmation screen appears, press the Space key to return to the AE shift screen and shift the exposure the remaining amount.



Measure film plane illumination. Move cursor to the correction requested.

Press RETURN to make correction. Press the SPACE bar to return to AE Menu.

3) After completion of the communications, check exposure at LV9, LV12, and LV15.



Check film plane illumination.

To readjust, press the SPACE bar.

If OK, press the RETURN key.

# AF ADJUSTMENT

AF adjustment is intended to correct the data output by BASIS to provide accuratc autofocusing. In addition to actual adjustments,the AF adjustment menu also contains sub-programs which display AF sensor outputs and defocus readouts.

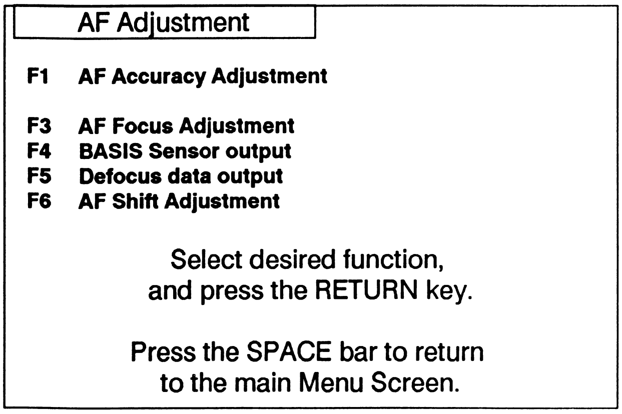
| | |
|---|---|
| **1.** AF Accuracy adjustment | Dark current, AGC, and sensor balance are adjusted. |
| **2.** AF Focus adjustment | This adjust AF focus electrically to match the mechanical FDD adjustment performed earlier. The FDD must be input into the multiple tool before this adjustment can be made. |
| **3.** Sensor graph output | This displays the output of the sensors. It is used to insure even lighting of the charts, and check for dust specs, etc. on the sensors. |
| **4.** Defocus output | This function is used as the final check of AF adjustments. |
| **5.** AF Focus shift | 1. This adjustment is included to correct possible focus errors when using the outermost focus frames on certain lenses with shallow depth of focus. (Example: EF50 mm f/1.0L)<br>2. A "total sensor adjustment" is included. It shifts the focus of all five frames. Using this adjustment is not recommended, except in exceptional cases. |

Uses of the sub-programs:

After AF unit replacement, both the **AF Accuracy** and **AF Focus Adjustments** are necessary.
To perform the AF Focus Checks, the **Defocus output** screen is necessary.
To adjust the illumination on the various charts, the **Sensor graph output** screen is used.
To compensate for slight focus variations in certain lenses, the **AF Focus Shift** program is used.

## Preparation

1) Start adjustment program, connect the camera to the personal computer, and select AF Adjustment on the menu screen to display the AF menu screen shown in the right figure. Select the desired AF adjustment item on the menu screen.



AF Adjustment

**F1 AF Accuracy Adjustment**

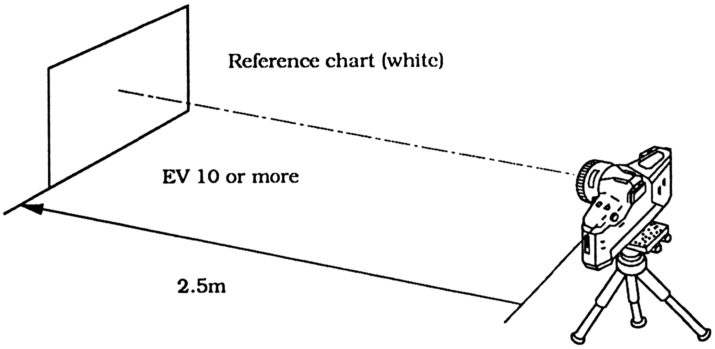
**F3 AF Focus Adjustment**
**F4 BASIS Sensor output**
**F5 Defocus data output**
**F6 AF Shift Adjustment**

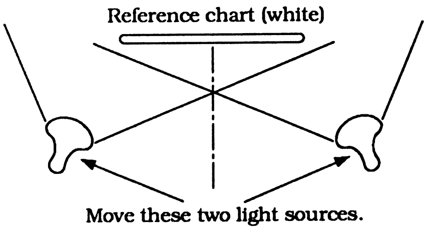
Select desired function,
and press the RETURN key.

Press the SPACE bar to return
to the main Menu Screen.

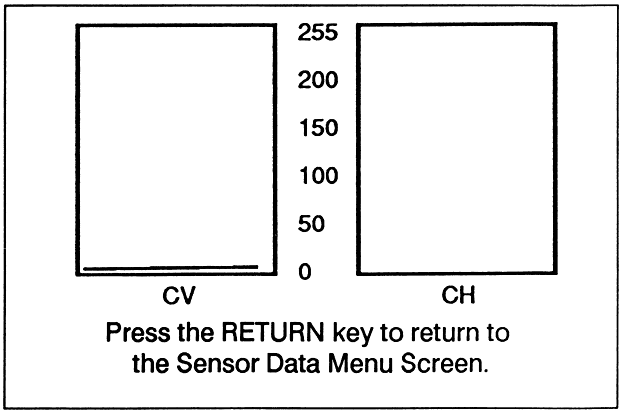
# Chart Illumination for AF Adjustments

- Chart illumination, for all adjustments that use charts, must be even over the area of the chart and above EV10. A DC power source is best, but not absolutely necessary. Lighting from both sides at 45 with tungsten or quartz lighting (no fluorescent lights) works best, but a single strong light (about 500W) can be used if it provides even illumination.
- Adjust the balance on the chart surface using the sensor graph output.
- Confirm that the brightness on the surface of the AF reference chart is at least EV10.
- The figure below shows the recommended setting of two light sources. A single light source can be used if it is bright enough (approximaly 500W) to give even illumination over the chart.


Reference chart (white)
EV 10 or more
2.5m


Reference chart (white)
Move these two light sources.

Insure that image data output has a linear waveform as shown at the right.


255
200
150
100
50
0
CV
CH

Press the RETURN key to return to the Sensor Data Menu Screen.

# AF Accuracy Adjustment

AF Accuracy adjustment must always be made when replacing the AF unit. AF Accuracy adjustment is necessary if it is impossible to store or transfer camera data before replacing the main flex. Otherwise, this adjustment is unnecessary.

### Purpose

AGC adjustment: Adjusting the gain of SPD to suit the brightness of the light source to insure an optimum image output.

DARK adjustment: Correcting minute electric current that BASIS (AF sensor ) will generate even in the absence of light (dark current).

Shading adjustment: Compensates for bit-to-bit variations in sensor output.

### Caution

AF Accuracy adjustment must alwasy be preceded by AF sensor positioning. There must also be no dirt adhering to the main mirror, sub mirror, or light receiving section of the AF sensor.

### Tools

Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000 or EF-500
EF50 mm f/1.8 production lens
Light
Tripod
Dark bag
AGC Chart

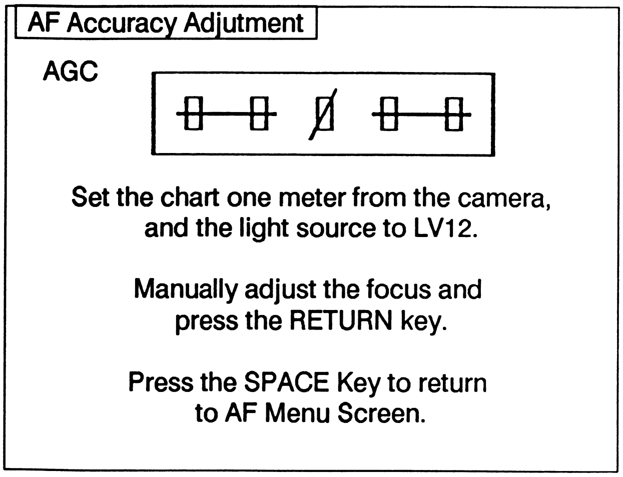
### Preparation

Set lighting equipment. (See Setting Lighting Equipment. )

### Procedure

1) Call up the AF MENU screen, and select AF Accuracy Adjustment. After communications are complete, the screen at the right appears.

Follow the instructions on the screen. When completed, press Return.



AF Accuracy Adjutment

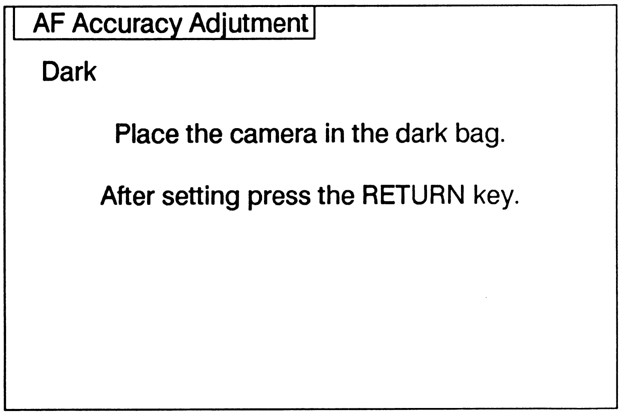
AGC

Set the chart one meter from the camera, and the light source to LV12.

Manually adjust the focus and press the RETURN key.

Press the SPACE Key to return to AF Menu Screen.

2) After communications are complete, the screen at the right appears. Place the camera in the dark bag, and press Return.



AF Accuracy Adjutment

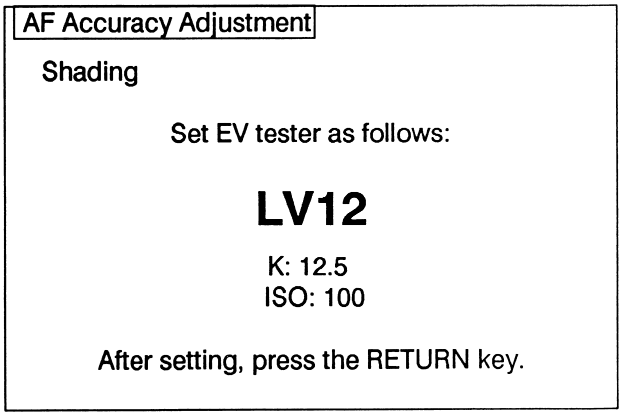
Dark

Place the camera in the dark bag.

After setting press the RETURN key.

3) After communications are complete, the screen at the right appears. Set the light source to LV12 and place the camera on the tester's stand and press Return again.

After communications are complete, the AF MENU Screen returns.



AF Accuracy Adjustment

Shading

Set EV tester as follows:

**LV12**

K: 12.5
ISO: 100

After setting, press the RETURN key.

# AF Focus Adjustment

## Purpose

The purpose of the AF focus adjustment is to match the AF sensor focus with the film focus. Before this adjustment is made, the flange to focal plane distance (FFD) at the center of the pressure plate must be measured.

## Caution

The main mirror, sub mirror, and light receiving section of the AF sensor must be clean when making this adjustment.

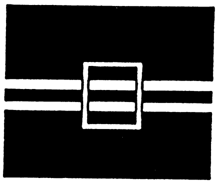
## Tools

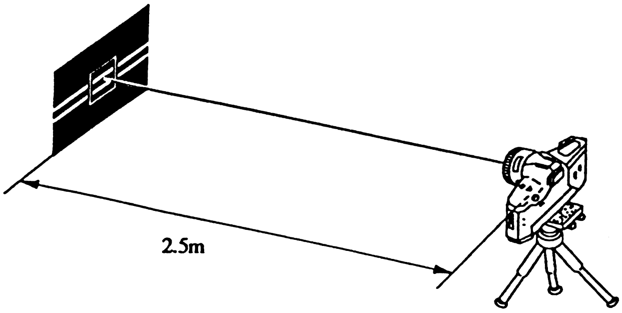
Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000 or EF-500
EF50 mm f/1.8 TOOL lens
Light
Tripod
Dial gage set (44.14 mm gage or 42.14 + 2 mm adapter)

## Preparation

1) Set lighting equipment. (See Setting Lighting Equipment. )

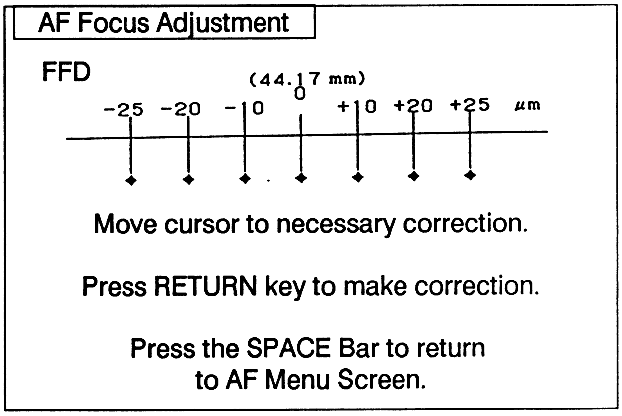
2) Set the camera at bulb and measure the FFD at the certer of the pressure plate with a 44.14 mm gage (or a 42.14mm gage and a +2mm adapter)





## Procedure

1) Select AF Focus Adjustment on the AF menu screen to display the screen shown on the right. Move the cursor to the measured FFD and press RETURN.


AF Focus Adjustment

FFD (44.17 mm)

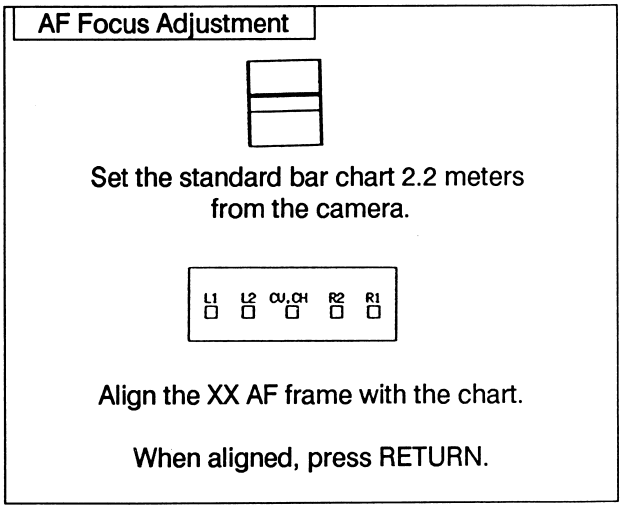
Move cursor to necessary correction.

Press RETURN key to make correction.

Press the SPACE Bar to return to AF Menu Screen.

2) After communications is completed, the screen shown at the right appears. Place the camera 2.5m ±10 mm from the AF reference chart, set the TOOL lens to infinity, and then manually focus it to the scribed 2.5 m line. Align the indicated autofocus frame of the finder with the bars of the AF reference chart and press the Return key. After all five vertical sensors have been checked, reset the chart vertically and check the center horizontal (CH) sensor.

When using a tool lens with a focus variation lable reading other than 0.00 proceed to step 3).


AF Focus Adjustment

Set the standard bar chart 2.2 meters from the camera.

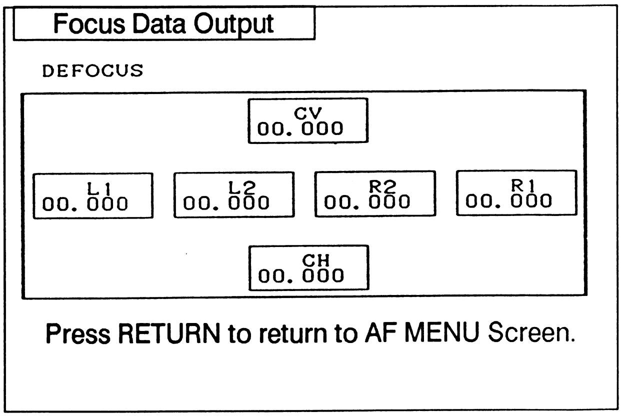
Align the XX AF frame with the chart.

When aligned, press RETURN.

3) Select Focus Data Output on the AF menu screen to display the screen shown at the right. Turn the focusing ring of the lens from the infinity end while observing the DEFOCUS indication. Stop the focusing ring when the DEFOCUS indication reaches a value which is equal to, but opposite in sign to the variation marked on the tool lens. (See that GAIN is set to L.)

When the focusing ring is overturned, be sure to set it back to the infinity end and then turn it again.

(Example) When the defocus is +0.03, stop the focusing ring when the DEFOCUS indication reaches -0.03


Focus Data Output

DEFOCUS

CV 00.000

L1 00.000

L2 00.000

R2 00.000

R1 00.000

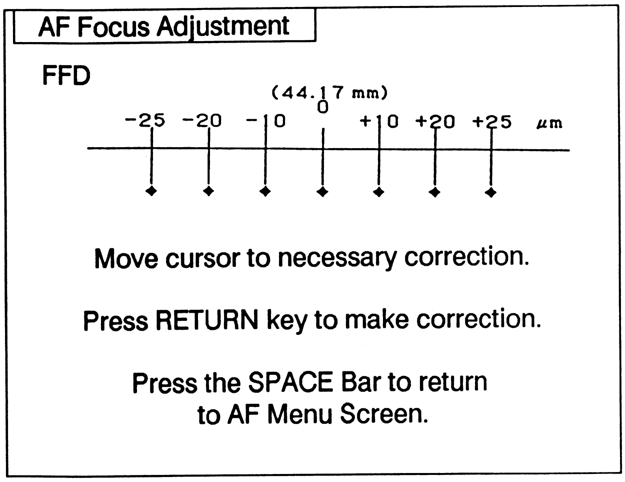
CH 00.000

Press RETURN to return to AF MENU Screen.

4) Press the Return key to return to the AF menu screen.

5) Press the F3 key to display the screen shown at the right. Move the cursor to the position of the same measured value as in step 1) and then press the Return key.

6) Repeat steps 2) and 3) to make AF focus adjustment again.


AF Focus Adjustment
FFD
(44.17 mm)
0
-25
-20
-10
+10
+20
+25
µm

Move cursor to necessary correction.

Press RETURN key to make correction.

Press the SPACE Bar to return
to AF Menu Screen.

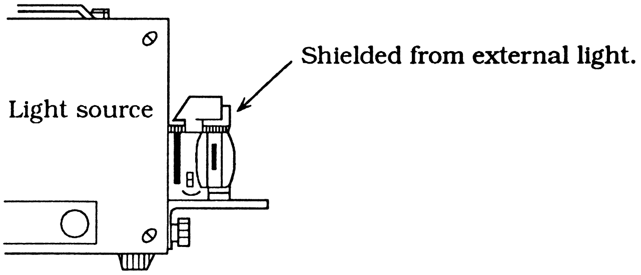
# AF Sensor Dust Check

**Tools**

Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000 or EF-500

**Preparation**

Set the camera body, without lens, on the AE tester stand. Set the light source to LV12. (Be sure to shield the camera eyepiece from external light.)

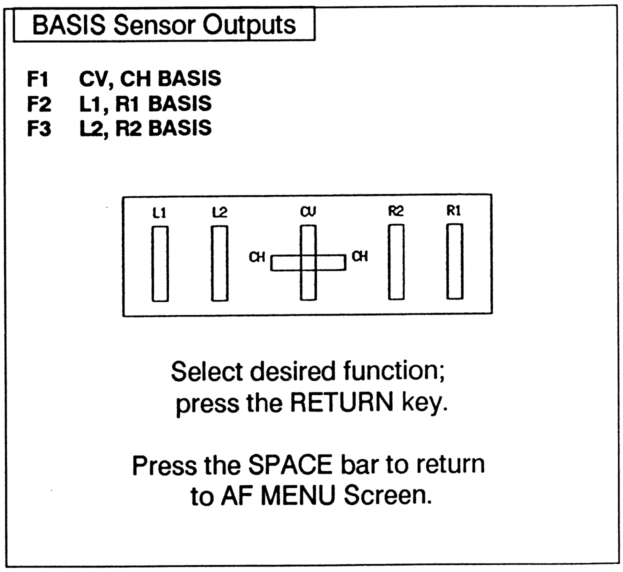


**Procedure**

1) Select Sensor Data Output on the AF menu screen to display the sensor data. After communications are completed, this screen will appear. Select the sensor you wish to monitor.

2) Check if the output waveform is linear. If not, dust may be on the AF sensor.

3) Press the Return key to return to the sensor data menu screen.



BASIS Sensor Outputs

**F1 CV, CH BASIS**
**F2 L1, R1 BASIS**
**F3 L2, R2 BASIS**

Select desired function;
press the RETURN key.

Press the SPACE bar to return
to AF MENU Screen.

## Defocus Data Check

### Tools

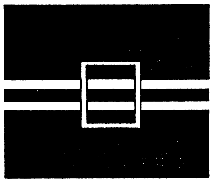
Personal computer
RS-232C cable
HS-I/F
Regulated DC power supply
Tool battery
Adjustment software (stored on a work disk)
Light
Tripod
AF reference chart
16 mm bar chart
45° chart

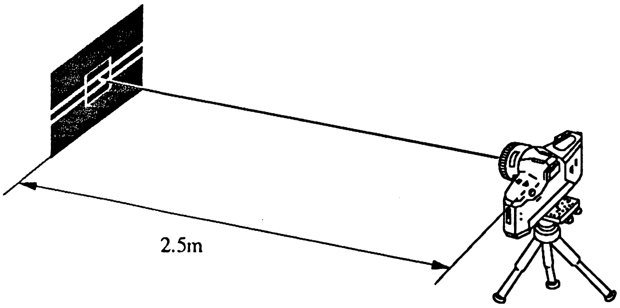
### Procedure

1) Set lighting equipment. (See Setting Lighting Equipment. )

2) Set the AF reference chart, as shown in the figure below.

3) Set the lens to AF and focus. (Upon completion of focusing, set the lens back to manual mode.)

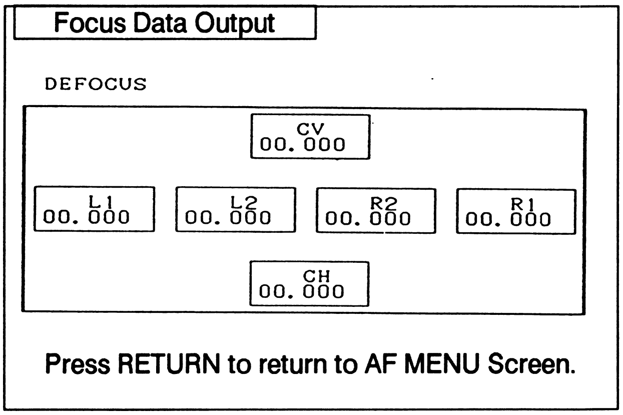




**4)** Select Focus Data Output on the AF menu screen to display this screen.

When the lens is in focus, DEFOCUS is displayed as “0" .

Make measurements on the AF reference chart, 16mm bar chart, and 45° chart and check whether the defocus conforms to the standard specified in the tables below.



Focus Data Output

DEFOCUS

CV
00.000

L1
00.000

L2
00.000

R2
00.000

R1
00.000

CH
00.000

Press RETURN to return to AF MENU Screen.

| | AF Reference Chart | | 16mm Bar Chart | | 45° Bar Chart | | |
|---|---|---|---|---|---|---|---|
| | Center Sensor | Other Sensors | Center Sensor | Other Sensors | Center Sensor Verti. | Center Sensor Horiz. | Other Sensors |
| 50/1.8 Tool Lens | ±0.060 | ±0.069 | ±0.060 | ±0.08 | ±0.12 | 0.14 | ±0.13 |

| | AF Reference Chart | |
|---|---|---|
| | Center Sensor | Other Sensors |
| 50/1.8 Tool Lens | ±0.060 | ±0.069 |
| Brighter than f/1.8 Lens | ±0.07 | ±0.091 |
| Brighter than f/2.8 Lens | ±0.085 | ±0.110 |
| Brighter than f/4.0 Lens | ±0.10 | ±0.13 |
| Brighter than f/5.6 Lens | ±0.12 | ±0.156 |
| f/5.6 or Darker Lens | ±0.16 | ±0.208 |

# AF Focus Shift

## Purpose

This is an improved adjustment to correct minute AF defocus that may result from use of a lens with very shallow depth of focus, such as EF 50mm f/1.0 L and EF 85mm f/1.2 L, EF 50mm f/1.8, and EF 135mm f/2.8SF. It is model-specific and either, or both of the outermost sensors can be adjusted. In addition to the model-specific adjustments, there is a mode which shifts all five sensors, but using this mode is not recommended except in very special cases, since lens interchangability is lost if the sensors are shifted for a specific lens.

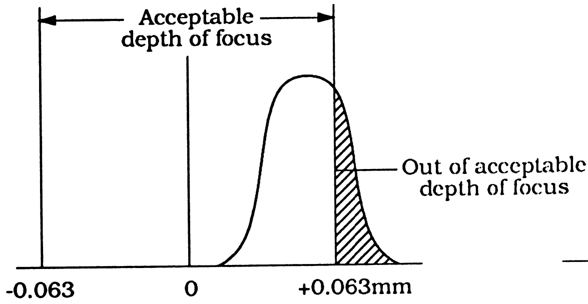
AF focus shift must never be made to correct defocus caused by any lenses other than the above listed lenses.

## Minute Defocus

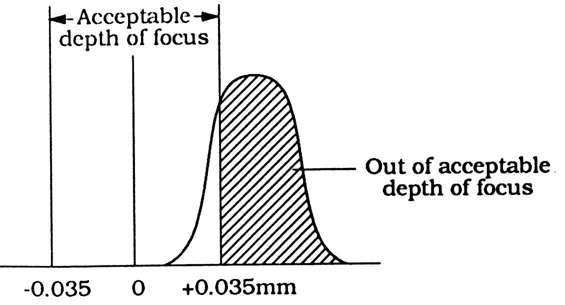
EOS Series cameras and lenses are designed so that their defocus does not exceed standard values of 0 + 0.03 mm and 0 + 0.02 mm respectively. EF50 f/1.0 L and EF85 f/1.2 L also conform to these standards. However, both these lenses have very shallow depth of focus. Therefore, when used together with a camera whose defocus has the same sign, the lenses may exceed the acceptable depth of focus even if the defocus of both the lenses and the camera conform to the standards. In this event, the user of the lenses may complain of unsharp focus.

Example: Unsatisfactory combination of camera and lens (Camera: 0 + 0.03 mm Lens: 0 + 0.02 mm)

Combination of EOS - 1 and EF 50 mm/1.8 L



Combination of EOS - 1 and EF 50 mm/1.0 L



## Caution

AF focus shift is intended to correct total AF defocus resulting from use of a particular camera in combination with a lens with a shallow depth of focus. Therefore, AF focus shift must always be made on that camera and lens. AF focus shift must also be made after adjusting both the camera and lens.

A lens with a shallow depth of focus may focus correctly without any AF focus shift correction despite is user's complaint. This phenomenon can be attributed to the following:

(1) Variations in range measurement that result from shooting of an object difficult to focus.
(2) Shift of an object in the period between turning on of SW2 and exposure.

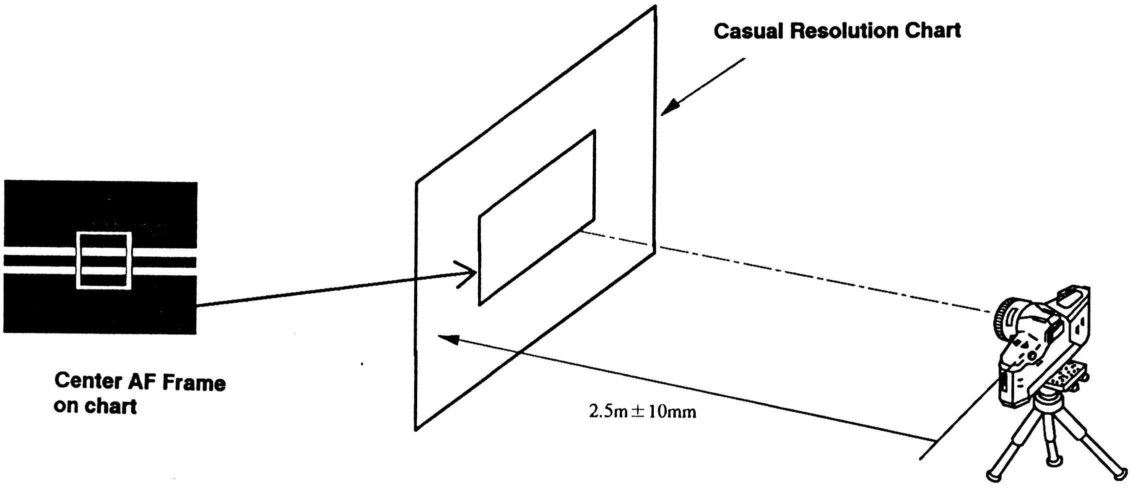
## Tools

Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
Light
Tripod
AF reference chart

## Preparation

1) Set lighting equipment. (See Setting Lighting Equipment. )

2) Set the AF reference chart as shown in the figure below.

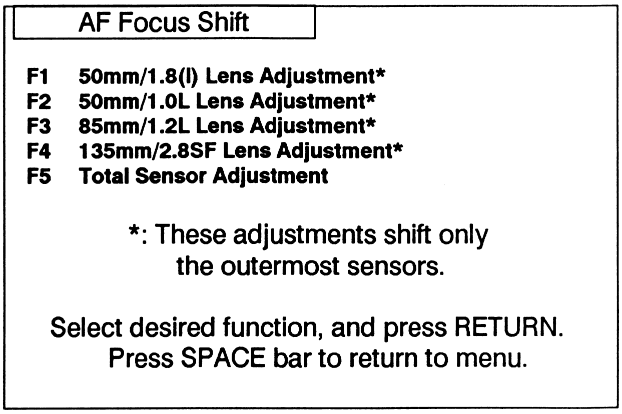


## Procedure

1) Select AF Focus Shift on the AF menu screen to display this screen.After communication is completed, this screen will appear. Select a function

Select function F1 to follow this explanation.

(The sequence is slightly different when F5 is selected from when F1 through F4 are selected.)


AF Focus Shift

**F1 50mm/1.8(I) Lens Adjustment***
**F2 50mm/1.0L Lens Adjustment***
**F3 85mm/1.2L Lens Adjustment***
**F4 135mm/2.8SF Lens Adjustment***
**F5 Total Sensor Adjustment**

*: These adjustments shift only the outermost sensors.

Select desired function, and press RETURN.
Press SPACE bar to return to menu.

2) After communication is finished, this screen will appear Select F1 Right Sensor, and press return

3) After communication is finished, this screen will appear. Move the cursor to the -30 position and press Return.

4) Attach the lens and press SW1 to focus and shoot the chart ten times (with the aperture fully open).

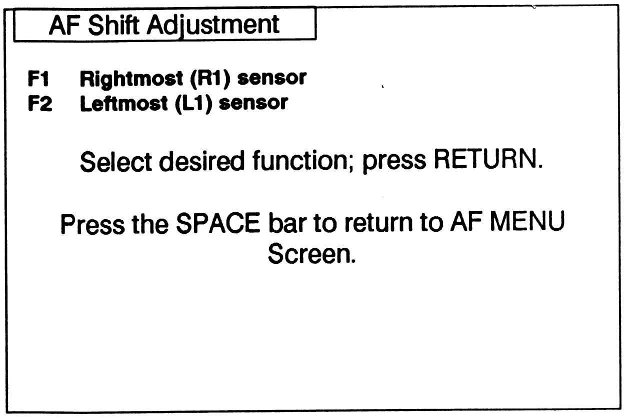
5) After shooting, confirm that the screen shown at the right appears. Press the Space key to return to the screen displayed in step 2). Move the cursor to the +30 position and press Return to reset the AF focus shift to zero.
Shoot the chart ten times in the same manner as in step 3).

6) Press the Space key to return to the screen displayed in step 2). Move the cursor to the +30 position and press the Return key. Shoot the chart ten times as in step 3).

7) Press the Space key to return to the screen displayed in step 2). Move the cursor to the -30 position and press Return to reset the AF focus shift amount to zero.

Develope the film and examine the results. Display the AF Shift Adjustment Screen and move the cursor under the correction which gave the best results. Press the Return key to complete AF focus shift.

If the left sensor needs to be adjusted, follow the same procedure 3) through 7). When usinf F5, the Total Sensor Adjustment, the procedure is the same, except that the Sensor Selection Menu does not appear.

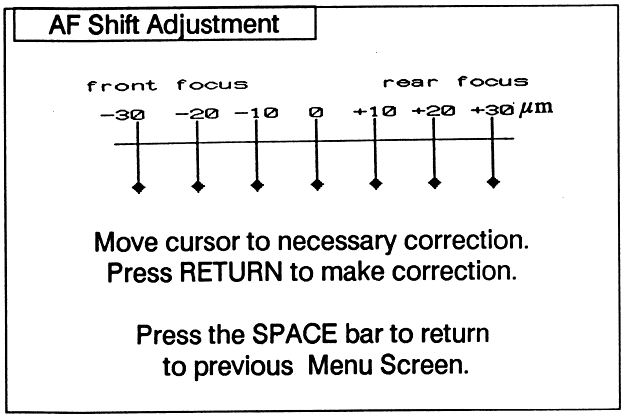


AF Shift Adjustment

**F1 Rightmost (R1) sensor**
**F2 Leftmost (L1) sensor**

Select desired function; press RETURN.

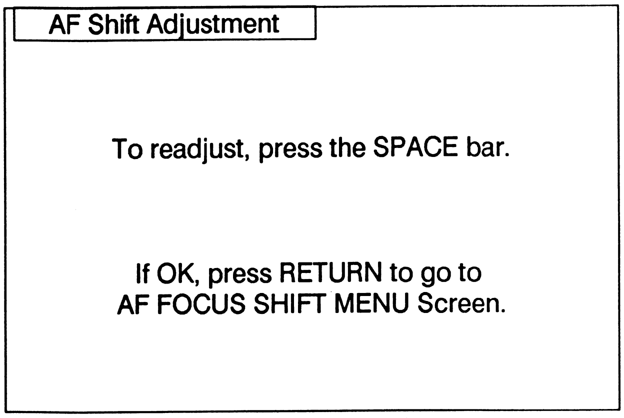
Press the SPACE bar to return to AF MENU Screen.



AF Shift Adjustment

Move cursor to necessary correction.
Press RETURN to make correction.

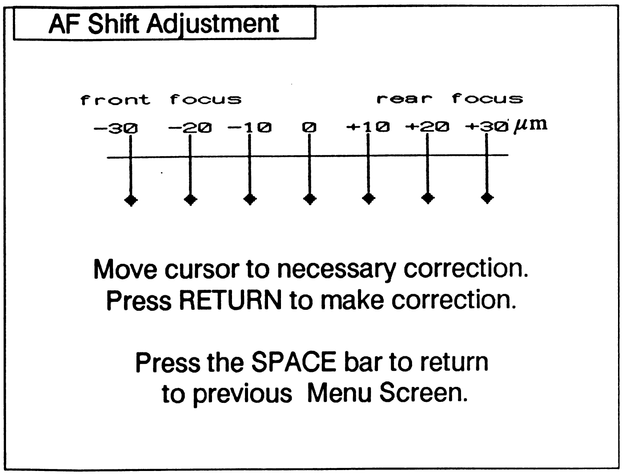
Press the SPACE bar to return to previous Menu Screen.



AF Shift Adjustment

To readjust, press the SPACE bar.

If OK, press RETURN to go to AF FOCUS SHIFT MENU Screen.



AF Shift Adjustment

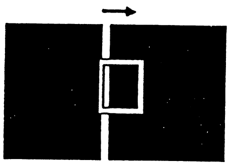
Move cursor to necessary correction.
Press RETURN to make correction.

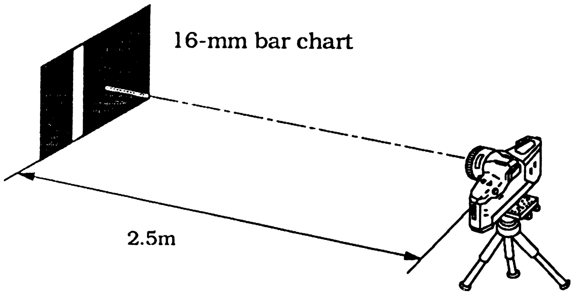
Press the SPACE bar to return to previous Menu Screen.

# Total AF Accuracy Check (on Both Camera Body and Lens)

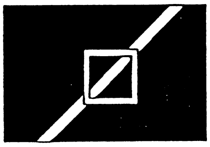
## Procedure

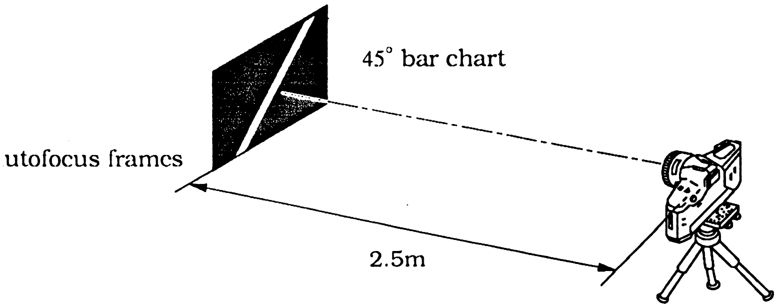
1) Attach the lens to the camera and set the lens to infinity in the manual mode.
2) Set the AF reference chart so that the distance between the AF reference chart and the film surface is 50 times the focal length of the lens.
3) In Autofocus mode, focus on the chart. (Upon completion of focusing, set the lens to manual.)
4) Select Focus Data Output from the AF menu screen.
   * When the lens is in focus, DEFOCUS is displayed as 0 .
5) Press the Return key to return to AF menu screen. Focus on the AF reference chart, 16 mm bar chart, and 45° chart several times and check whether the defocus amount conforms to the standard in the Defocus Data Table (pg. 3-xx.).
6) Set the 16mm bar chart as shown in the figure below.
7) Repeat steps 3) to 5) to check AF accuracy at least five points moving the camera slightly each so the image of the bar moves from one side of the autofocus frame to the other.





8) Set the 45° bar chart as shown in the figure below.
9) Repeat steps 3) to 5) to check AF accuracy.





If a defocus amount fails to conform to the standard, check the body with the standard tool lens as described on the next page.

## Partial AF Accuracy Check (on Camera Body Only)

**Caution:**

Shift the central standard defocus amount in Table 3-1 by the defocus correction marked on the tool lens.
(Example) When the tool lens is marked with a defocus correction of +0.03:

| | |
|---|---|
| AF reference chart | -0.030 to + 0.090 |
| 16 mm bar chart | -0.030 to +0.120 |

**Procedure**

1) Set lighting equipment (see Setting Lighting Equipment), attach the tool lens to the camera, set the AF reference chart, and align the center of the AF reference chart with that of the autofocus frames of the finder.
2) Read an output defocus amount.
3) If the defocus amount is 0 ±0.060 or less, AF accuracy is acceptable. If it is more than 0 ±0.060, AF focus adjustment is inadequate. In this event, make AF focus adjustment again.
4) Replace the AF reference chart with the 16mm bar chart and align the bar of the chart with the left side of the autofocus of the finder.
5) Read the defocus as in step 2). If it is 0 ±0.090 or less, AF accuracy is acceptable.
6) Shift the camera so the image of the bar gradually moves to the right side of the autofocus frame to read the defocus [steps 4) and 5)] at least five points.
7) If the defocus amount read at any point is more than 0 ±0.090, AF accuracy adjustment may have been made with dirt adhering to the main mirror, sub mirror, and light receiving section of the AF sensor.
In this event, air-clean them and make AF accuracy adjustment again.
8) Replace the 16mm bar chart with the 45° bar chart and align the bar of the chart as shown in step 7 of the total check.
9) Readoutput defocus amount in the same manner as in step 2). If it is 0 ±0.105 or less, AF accuracy is acceptable. If it is more than 0 ±0.105, the AF sensor may be faulty.

# Unresolved Focusing Problems

If a camera and lens has been brought to service with a specific claim of poor autofocusing, but all data in the previous test proves normal, the two most probable causes are:

1. Difficult subjects for autofocus
2. Defective sensor (shock damage or dust)

## 1: Difficult Subjects for Autofocus

### *Focusing Impossible*

| Subject Condition | Cause |
|---|---|
| Subject has no, or very little contrast | Subject cannot be detected. This is the same as trying to focus on a blank wall. |
| Subject is very low brightness (EV0 or less within the AF frame) | This brightness is below the threshold level of the sensor. |
| Subject has very high reflectivity (like a mirror) | The very high reflected light upsets the balance between the two signals being compared causing an error signal. |
| Subject is strongly backlit | The backlighting upsets the balance between the two signals being compared causing an error signal. |

### *Focusing very difficult*

| | |
|---|---|
| More than one subject at different distances | The system cannot decide which subject is the main one. |
| Subject is moving fast toward or away from the camera. | Speed exceeds processor capability. |

## 2: Defective AF sensor (shock, etc.) or dirt adhering to the AF sensor.

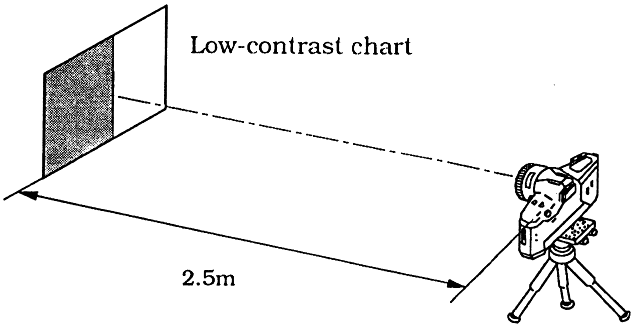
Some faults such as extremely low contrast cannot be attributed to shooting of an object difficult to focus and must therefore be identified by the following methods.

1) Make total AF accuracy check (on both the camera body and the lens) and partial AF accuracy check (on the camera body only) to identify which, the body or the lens, is faulty.

2) If the camera body is suspected of being faulty, set lighting equipment in the same manner as in partial AF accuracy check, set a low-contrast chart, and read an output defocus amount.

   If the defocus amount is more than 0 ±0.120, the AF sensor is deformed.

   If the defocus amount is 0 ±0.120 or less, dirt may be or may have been adhering to the AF sensor. In this event, clean the AF sensor and confirm that it is free of dirt.



# OTF FLASH ADJUSTMENT

OTF Flash adjustment is intended to adjust the output level and gain of the flash sensor to provide precise flash exposure control. Flash adjustment must always be made when replacing the main flex or flash sensor. Flash adjustment must also be preceded by shutter adjustment.

## Purpose

1. OTF level adjustment:
Adjusting the output level of the flash sensor so that an appropriate quantity of light may be applied to an image surface by the flash (ISO 100).

2. OTF gain adjustment:
Adjusting the gain of the flash sensor so that the same quantity of light may be applied to an image surface at both ISO 100 and ISO 400. (This adjustment is completely automatic in this model.)

## Standard

Average ± 1EV or less

## Caution

Ambient light should be under EV3, eapecially for the ISO 400 gain adjustment. If a dark room is not available, establish a test area with stable conditions and no highly reflective objects. Test about ten cameras from stock and establish an average.

## Tools

Personal computer
RS-232C cable
HS-I/F
DC stable power
Tool battery
Adjustment program (stored on a work disk)
EF-8000 or EF-500 (Direct flash sensor DIR201)
EF50 mm f/1.8 production lens
Speedlite (300 EZ, 420 EZ, or 430 EZ)
Standard 18% Gray Reflector
Tripod

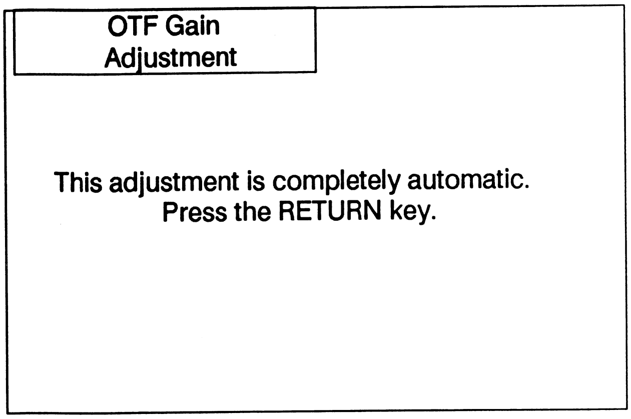
## Preparation

**1)** Fix the camera on the tripod and attach the EF50 mm f/1.8 production lens and speedlite to the camera.

**2)** Set the camera in ISO 100 mode and the speedlite in ATTL mode and position the camera 2m ± 10mm away from the reflector.

## Procedure

From the main menu screen, select OTF Adjustment and press Return. The screen at the right will appear. Follow its directions to automatically adjust the Flash gain.



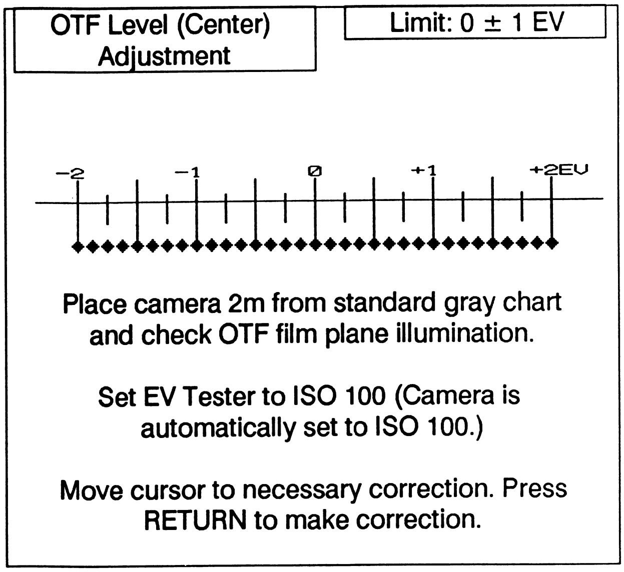
OTF Gain
Adjustment

This adjustment is completely automatic.
Press the RETURN key.

## Flash Level Adjustment

### Procedure

1. After finishing the gain adjustment, measure the flash exposure accuracy at the center several times. Move the cursor under to required correction. Press RETURN.



OTF Level (Center)
Adjustment

Limit: 0 ± 1 EV

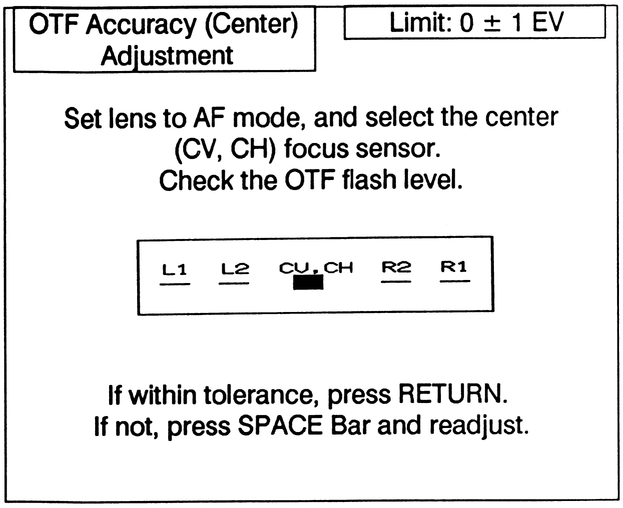
Place camera 2m from standard gray chart
and check OTF film plane illumination.

Set EV Tester to ISO 100 (Camera is
automatically set to ISO 100.)

Move cursor to necessary correction. Press
RETURN to make correction.

2. After communications is completed, this screen will appear. Check the flash exposure at the center sensor. If OK, press RETURN. If not press the SPACE bar and repeat the correction. When RETURN is pressed, the screen will switch to the other sensors in sequence. Follow the displayed instructions.

3. When the flash accuracy is acceptable on all sensors, press the Return key to return to the menu screen.



OTF Accuracy (Center)
Adjustment

Limit: 0 ± 1 EV

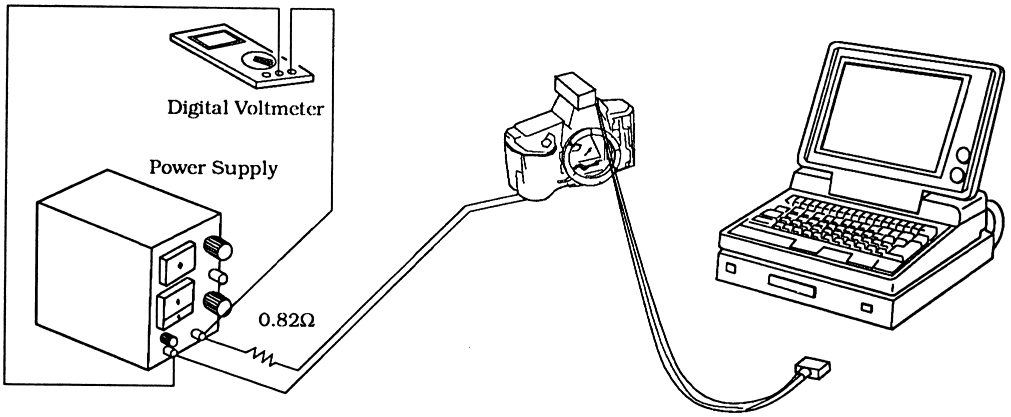
Set lens to AF mode, and select the center
(CV, CH) focus sensor.
Check the OTF flash level.

If within tolerance, press RETURN.
If not, press SPACE Bar and readjust.

# INHIBIT VOLTAGE ADJUSTMENT

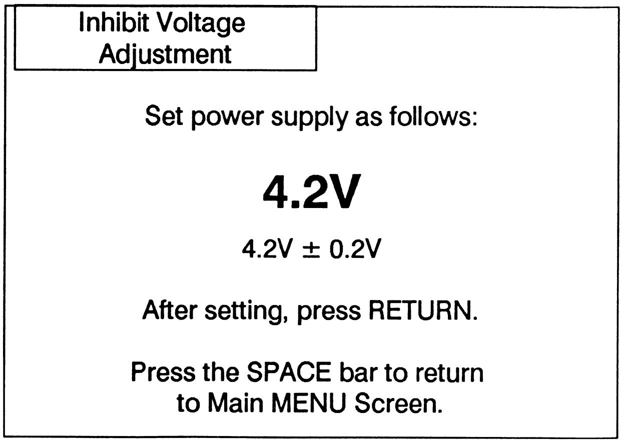
Inhibit voltage check must always be made when replacing the main flex, or DC/DC Connector.

| | |
|---|---|
| **Purpose** | To insure the operating accuracy of individual parts of the camera by setting the minimum voltage for camera operation. |
| **Tools** | Personal computer<br>RS-232C cable<br>HS-I/F<br>Regulated DC power supply<br>Tool battery<br>Adjustment program (stored on a work disk)<br>Digital tester |
| **Preparation** | Start adjustment program, connect the camera to the personal computer, and select Inhibit Voltage Adjustment on the main menu screen. |
| **Caution** | This adjustment requires a 0.82Ω resister in the power supply line to accurately adjust the changeover points of the battery indicator. |



## Procedure

1) Set supply voltage to 4.2 ±0.2V and press the Return Key to display this screen.



**Inhibit Voltage Adjustment**

Set power supply as follows:

**4.2V**

4.2V ± 0.2V

After setting, press RETURN.

Press the SPACE bar to return to Main MENU Screen.

2) After communications is completed, check the inhibit voltage in the method described below.

**Inhibit Voltage Adjustment**

Battery Check Symbols

| | |
|---|---|
| 5.5V | FULL |
| 4.5-5.0V | HALF |
| 4.0-4.5V | EMPTY |
| < 4.0V | Inhibit Voltage |

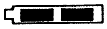
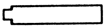
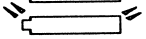
Gradually reduce voltage while releasing shutter. Check symbol changeover points and inhibit voltage.

If OK, press RETURN key.

If NG, press the SPACE bar, and readjust.

## Check method

Check inhibit voltage from the operation of the camera and the battery check mark. When checking the battery check mark, be sure to start at the higher voltage (6V) and decrease.

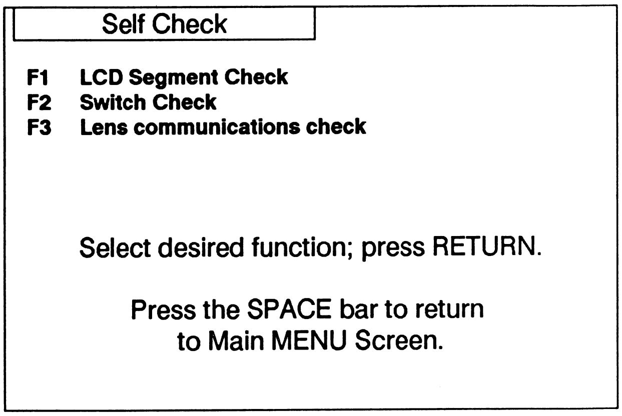
| Models | EOS 5QD/5/A2/A2E |
|---|---|
| Battery Capacity Display On LCD | |
| 5.5V OR More |  |
| 5.0 to 5.5V | |
| 4.5 to 5.0V |  |
| 4.0 to 4.5V |  |

# SELF CHECK

Self check can be classified into the following three types:

| | |
|---|---|
| LCD check: | Checking all the segments of the liquid crystal displays (LCDs). |
| SW check: | Checking the condition of the individual switches of the camera. |
| Lens data communication check: | Checking the communications between the lens and camera. |

Start adjustment program, connect the camera to the personal computer, and select Self Check on the menu screen to display the Self Check Menu Screen shown at the right.



Self Check

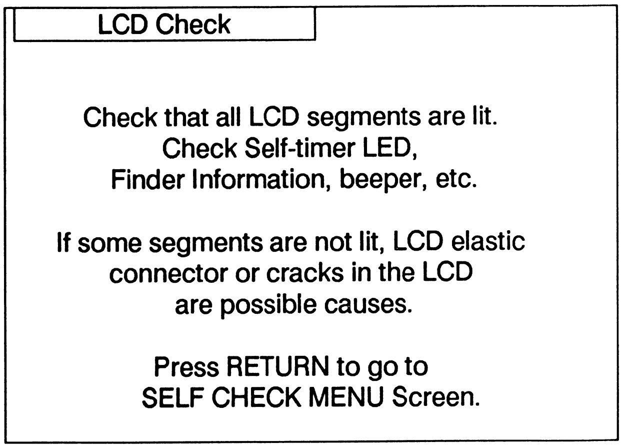
**F1 LCD Segment Check**
**F2 Switch Check**
**F3 Lens communications check**

Select desired function; press RETURN.

Press the SPACE bar to return
to Main MENU Screen.

## LCD Check

Press the F1 key to display this screen. Any LCD which fails to come on at this time is suspected of being faulty. Press the Return key to return to the Self Check Menu Screen.



LCD Check

Check that all LCD segments are lit.
Check Self-timer LED,
Finder Information, beeper, etc.

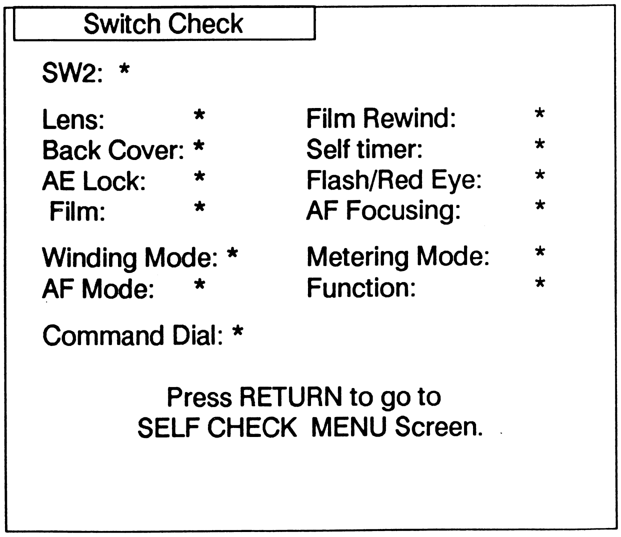
If some segments are not lit, LCD elastic
connector or cracks in the LCD
are possible causes.

Press RETURN to go to
SELF CHECK MENU Screen.

## SW Check

Press the F2 key to display the screen shown at the right. Any switch whose state fails to coincide with that displayed on this screen is suspected of being faulty.

Press the Return key to return to the Self Check Menu Screen.

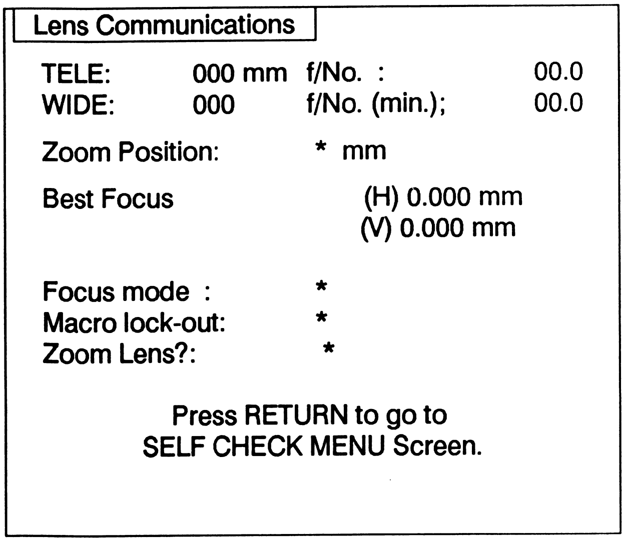


```
Switch Check

SW2:  *

Lens:         *        Film Rewind:        *
Back Cover:   *        Self timer:         *
AE Lock:      *        Flash/Red Eye:      *
 Film:        *        AF Focusing:        *

Winding Mode: *        Metering Mode:      *
AF Mode:      *        Function:           *

Command Dial: *

          Press RETURN to go to
        SELF CHECK  MENU Screen.
```

## Lens Data Communications

Press the F3 key to display the lens data screen. If the actual condition is different from that displayed, the lens may be faulty.

Press the Return key to return to the Self Check Menu Screen.



```
Lens Communications

TELE:        000 mm  f/No. :          00.0
WIDE:        000     f/No. (min.);    00.0

Zoom Position:        *  mm

Best Focus                (H) 0.000 mm
                          (V) 0.000 mm

Focus mode  :         *
Macro lock-out:       *
Zoom Lens?:           *

          Press RETURN to go to
        SELF CHECK MENU Screen.
```

# INITIALIZATION/DATA TRANSFER

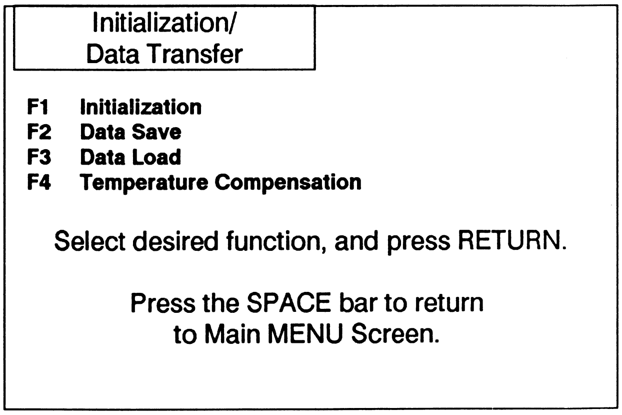
## PURPOSE

This menu is used for four operations: initialization, Data Transfer between the camera and computer, and temperature compensation.

| | | |
|---|---|---|
| 1. | Initialization: | Transfering default camera data to the camera when it was impossible to save the original data before replacing the main flex. Initialization is model specific, and once a camera has been initialized as an EOS A2/A2E, it cannot be returned to EOS 5/5QD specifications. Take care! |
| 2. | Data Save (Camera to PC): | This procedure is used to store camera data in the Personal computer prior to repair. |
| 3. | Data Load (PC to Camera) | This procedure is used for reloading camera data after the main flex has been changed. |
| 4. | Temperature Compensation: | This procedure corrects the errors in the internal thermometer in the camera. (This temperature data is used in both AE and AF adjustments.) |

## Preparation

Start the adjustment program (see the start-up procedures), connect the camera to the PC and select Initialization/Data Transfer from the menu screen. The screen at the right will be displayed.



Initialization/
Data Transfer

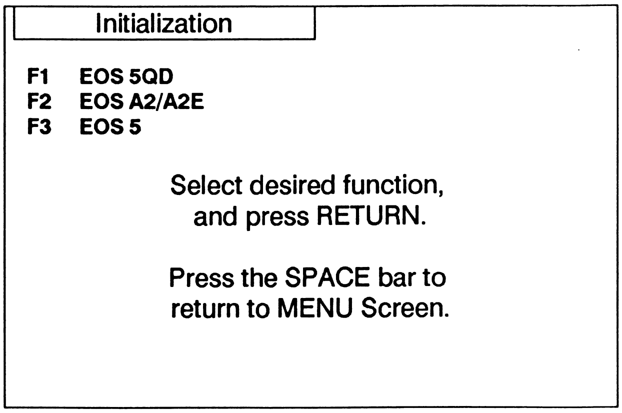
**F1 Initialization**
**F2 Data Save**
**F3 Data Load**
**F4 Temperature Compensation**

Select desired function, and press RETURN.

Press the SPACE bar to return
to Main MENU Screen.

## INITIALIZATION

1) Press function key F1 to call up the screen at the right. When it appears, select the correct model, and press RETURN.



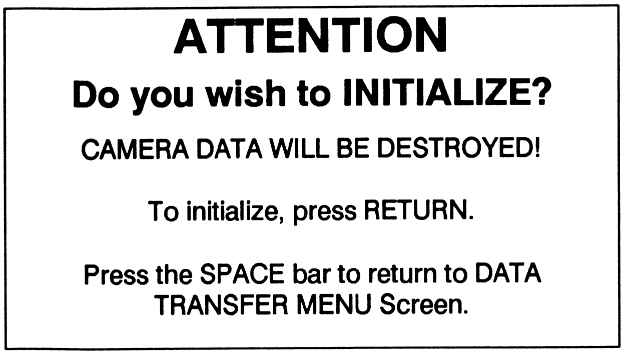
Initialization

**F1 EOS 5QD**
**F2 EOS A2/A2E**
**F3 EOS 5**

Select desired function,
and press RETURN.

Press the SPACE bar to
return to MENU Screen.

**2)** The initialization screen will appear. If you do wish to initialize, press Return. If not, press the SPACE bar to return to the Initialization /Data Transfer menu.



ATTENTION

Do you wish to INITIALIZE?

CAMERA DATA WILL BE DESTROYED!

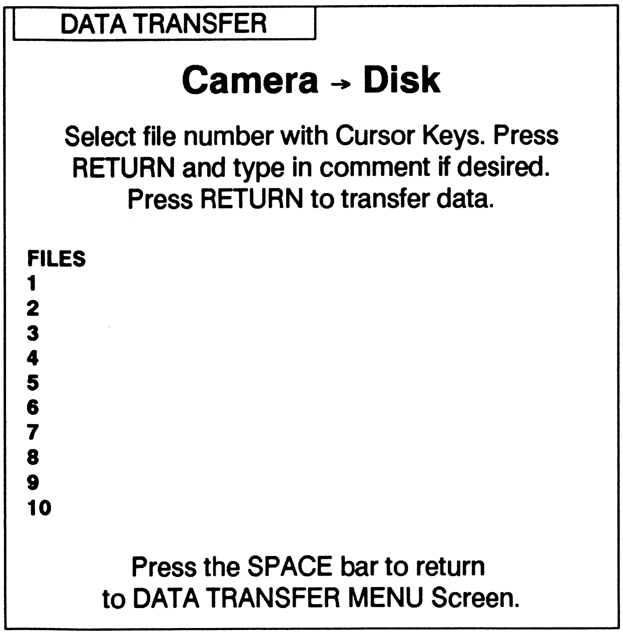
To initialize, press RETURN.

Press the SPACE bar to return to DATA TRANSFER MENU Screen.

## Data Saving

**1)** Press function key F2 to call up the screen at the right. Press the ↑ and ↓ cursor keys to select an empty file position to file the camera data. Press Return to move the cursor to the comment space and type in your comment (each comment can contain up to ten characters). To store the data, press Return.

**2)** When the data is stored, the Initalization / Data Transfer menu will reappear.



DATA TRANSFER

Camera → Disk

Select file number with Cursor Keys. Press RETURN and type in comment if desired. Press RETURN to transfer data.

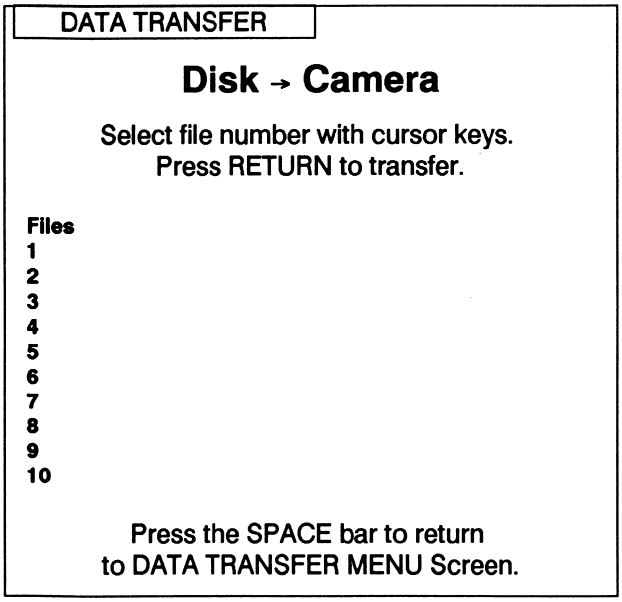
FILES
1
2
3
4
5
6
7
8
9
10

Press the SPACE bar to return to DATA TRANSFER MENU Screen.

## Data Reloading

**1)** Press function key F3 to call up the screen at the right. Press the ↑ and ↓ cursor keys to select the file you wish to reload into the camera. Press Return to reload the data.

**2)** When the data is stored, the Initialization /Data Transfer menu will reappear.



DATA TRANSFER

Disk → Camera

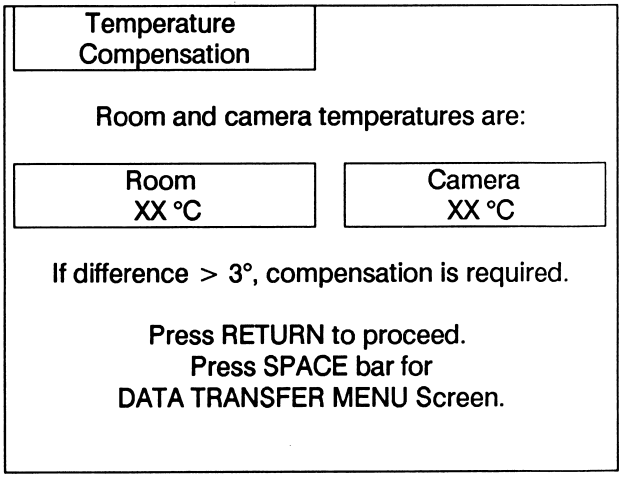
Select file number with cursor keys. Press RETURN to transfer.

Files
1
2
3
4
5
6
7
8
9
10

Press the SPACE bar to return to DATA TRANSFER MENU Screen.

## TEMPERATURE COMPENSATION

1) Press Function Key F4. The screen at right will appear. The temperature sensed by the Multiple Tool (Room) and by the camera will be shown.



Temperature Compensation

Room and camera temperatures are:

Room XX °C

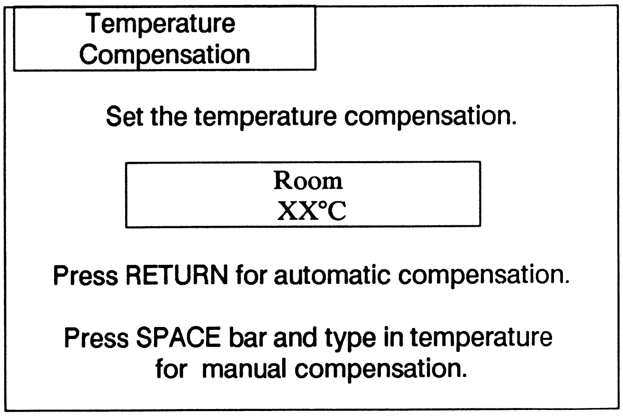
Camera XX °C

If difference > 3°, compensation is required.

Press RETURN to proceed.
Press SPACE bar for
DATA TRANSFER MENU Screen.

2) If the difference is greater than 3°C, press Return. When Return is pressed, the screen at right appears indicating the HS-I/F temperature. Check that it is reasonable. If so, press Return.

If the temperature displayed is not correct, press the SPACE bar and the cursor will go into the temperature box. Check the temperature with a separate thermometer and type in the correct reading.



Temperature Compensation

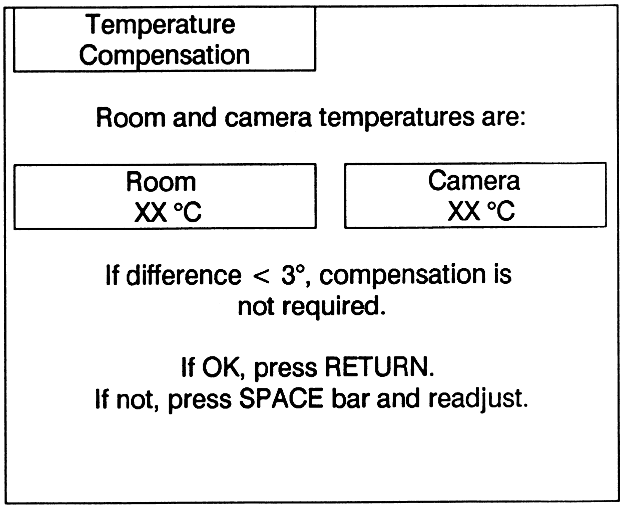
Set the temperature compensation.

Room XX°C

Press RETURN for automatic compensation.

Press SPACE bar and type in temperature
for manual compensation.

3) When Return is pressed, this screen reappears. Check that the readings are within 3°C.
If not, press the SPACE bar and readjust. If OK, press Return to return to the Initialization/Data Transfer menu.



Temperature Compensation

Room and camera temperatures are:

Room XX °C

Camera XX °C

If difference < 3°, compensation is
not required.

If OK, press RETURN.
If not, press SPACE bar and readjust.

# EOS5 EYE ADJUSTMENT SOFTWARE START-UP

## CAUTION

Always use the regulated power supply and tool battery when doing these adjustments. If the customer's battery is used, it will be drained quickly because the IRED's are on for long intervals during the adjustment.

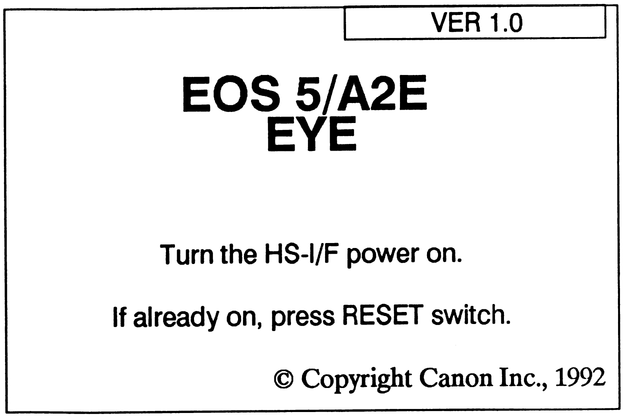
If the camera is in for an inoperative eye-controlled focus (ECF), first check if it can be callibrated.Use position CAL-5, which is the position least likely to be used by the owner.

- If it can be callibrated by the repair person, the ECF is operating correctly; so the problem may be operational, such as the customer calibrating the camera under very different conditions from the actual operational conditions, not holding the camera correctly. It may be necessary to instruct the owner in the proper manner of holding the camera while calibrating and using ECF.
- If it cannot be calibrated by the repair person, the IREDs may be defective. Check using function F4, IRED Image Output.

## Procedure

1) Install the EOS5 EYE adjustment software work disk in the personal computer, then turn it on. If the personal computer is already turned on, load the work disk and press the reset switch.

2) After a while, the title screen appears as shown at the right. Turn on the HS-I/F in accordance with the directions displayed on the screen. If HS-I/F has already been turned on, turn it off once and then turn it on.



VER 1.0

EOS 5/A2E
EYE

Turn the HS-I/F power on.

If already on, press RESET switch.

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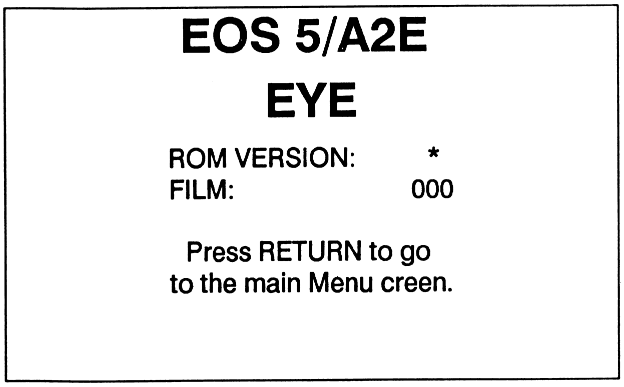
3) Upon establishment of communications between the personal computer and HS-I/F, the screen shown at the right appears. Connect the camera to HS-I/F. Then, turn on the main switch and then SW1 on the camera.

4) When communications are completed, the ROM version and number of films transported are displayed. Press the Return key to display the main EOS 5 EYE menu screen.



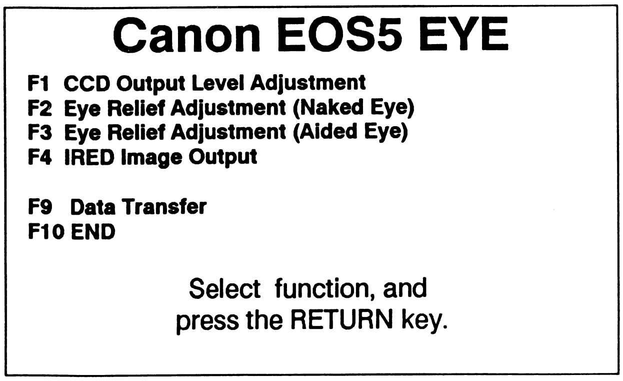
EOS 5/A2E

EYE

ROM VERSION: *
FILM: 000

Press RETURN to go
to the main Menu creen.

5) Select the desired adjustment item and press Return.



Canon EOS5 EYE

F1 CCD Output Level Adjustment
F2 Eye Relief Adjustment (Naked Eye)
F3 Eye Relief Adjustment (Aided Eye)
F4 IRED Image Output

F9 Data Transfer
F10 END

Select function, and
press the RETURN key.

# CCD OUTPUT LEVEL ADJUSTMENT

This adjustment is required if the Eye-controlled Focus Unit is replaced, or if the main flex is replaced without being able to store the original data prior to repair. If the main flex data was stored prior to repair, or if the unit is disassembled for cleaning, this adjustment is not necessary.

**Purpose**

The purpose of this adjustment is to adjust the output level of the CCD to compensate for individual variations in the eye-illuminating IRED's and the CCD itself.

**Tools**

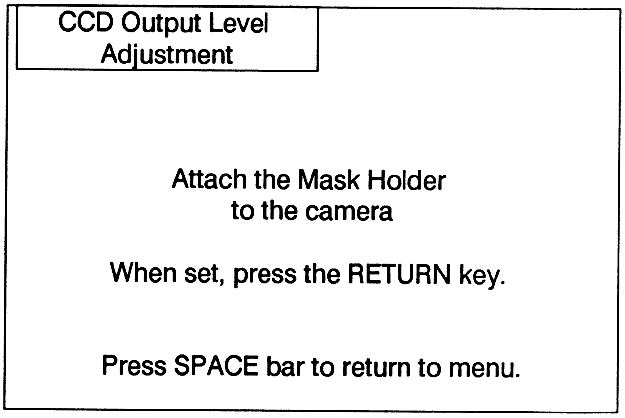
Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
Mask Holder
19% Chart paper

**Preparation**

Insert the 19% chart into the mask holder.

**Procedure**

1) When CCD Output Level is selected from the main memory, this screen appears. Follow the instructions and attach the mask holder (with 19% chart) to the camera and press RETURN. The adjustment is automatic, and the main menu screen will reappear when the adjustment is completed.



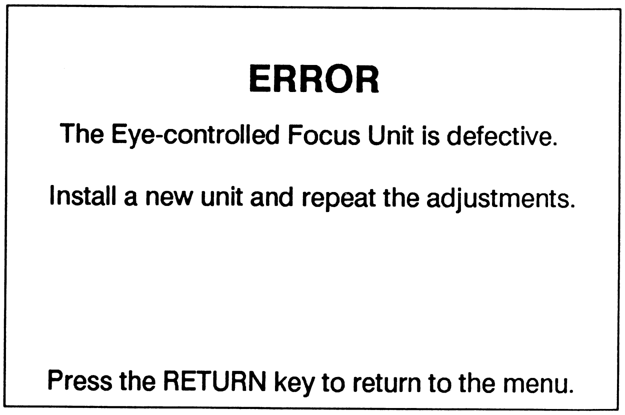
CCD Output Level Adjustment

Attach the Mask Holder to the camera

When set, press the RETURN key.

Press SPACE bar to return to menu.

2) If the results are not acceptable, the "Adjustment Impossible" screen appears. Check the Eye-controlled focus unit and the tools, and try the adjustment again.



ERROR

The Eye-controlled Focus Unit is defective.

Install a new unit and repeat the adjustments.

Press the RETURN key to return to the menu.

# EYE RELIEF ADJUSTMENT (Naked/Aided Eye)

This adjustment is required if the Eye-controlled Focus Unit is replaced, or if the main flex is replaced without being able to store the original data prior to repair. If the main flex data was stored prior to repair, or if the unit is disassembled for cleaning, this adjustment is not necessary.

This adjustment follows the CCD Output level adjustment.

## Purpose

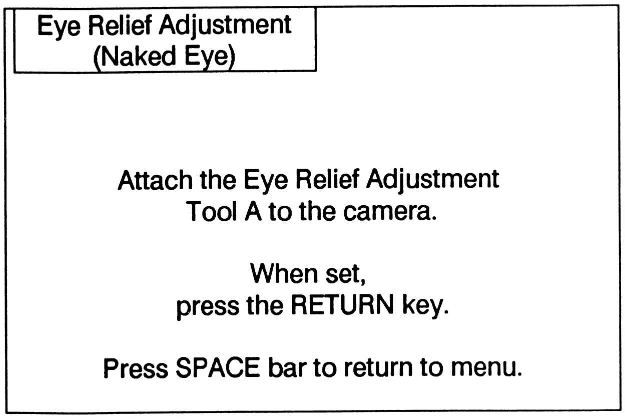
The purpose of this adjustment is electrically compensate for mechanical variations in the placement of the two sets of IREDs.

## Tools

Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
Eye Relief Compensation Tools A & B

## Procedure

1) When Eye Relief Adjustment (Naked Eye) is selected from the main memory, this screen appears. Follow the instructions and attach the Eye Relief Compensation Tool A. When attached, press RETURN. The adjustment is automatic, and the main menu screen will reappear when the adjustment is completed.



Eye Relief Adjustment
(Naked Eye)

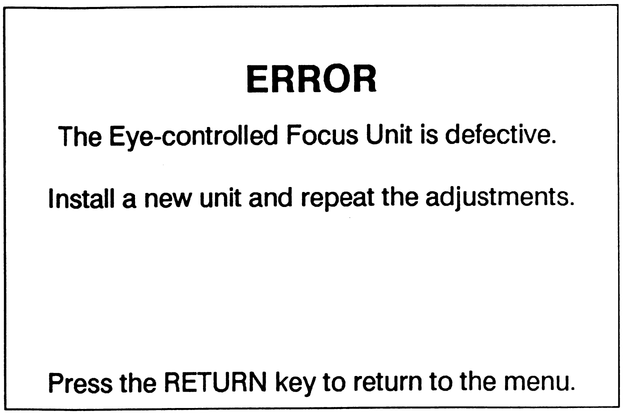
Attach the Eye Relief Adjustment
Tool A to the camera.

When set,
press the RETURN key.

Press SPACE bar to return to menu.

2) If the results are not acceptable, the “Adjustment Impossible” screen appears. Check the Eye-controlled focus unit and the tools, and try the adjustment again.

3) Select Eye Relief Adjustment (Aided Eye) from the main menu and repeat the adjustment using the Eye Relief Compensation Tool B.



ERROR

The Eye-controlled Focus Unit is defective.

Install a new unit and repeat the adjustments.

Press the RETURN key to return to the menu.

# IRED IMAGE OUTPUT

## Purpose

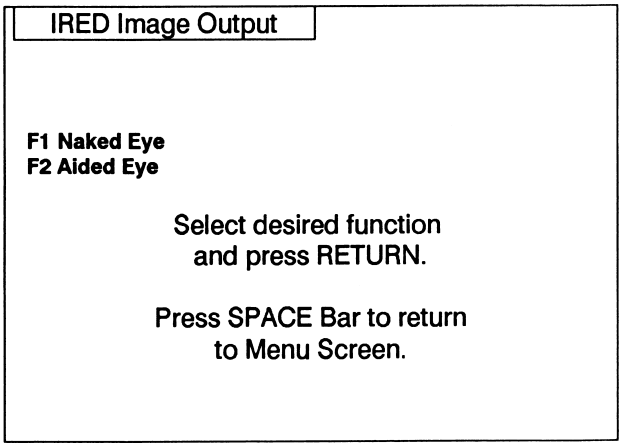
This function is used to check the output of the two sets of IREDs when the the Eye-controlled focus unit has been replaced, or if calibration is impossible. There are separate sets of IREDs for the naked eye and the aided-eye (eyeglasses or contact lenses). Both sets should be checked.

## Tools

Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
Eye Relief Compensation Tools A & B

## Procedure

1) When F4 IRED Image Output is selected from the menu screen, this screen is displayed. Select Naked Eye and press Return.



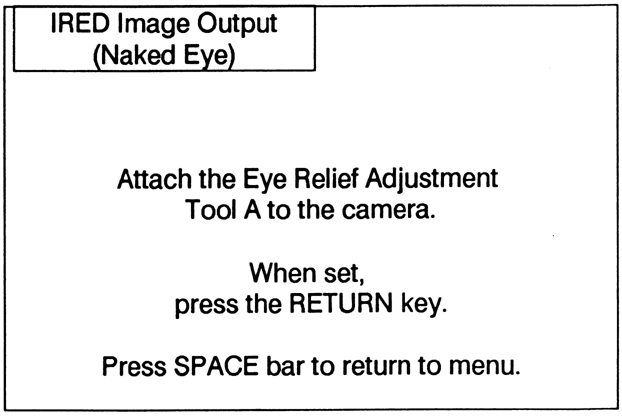
IRED Image Output

**F1 Naked Eye**
**F2 Aided Eye**

Select desired function
and press RETURN.

Press SPACE Bar to return
to Menu Screen.

2) Follow the instructions and install the Eye Relief Compensation Tool A on the eyepiece, and press Return.



IRED Image Output
(Naked Eye)

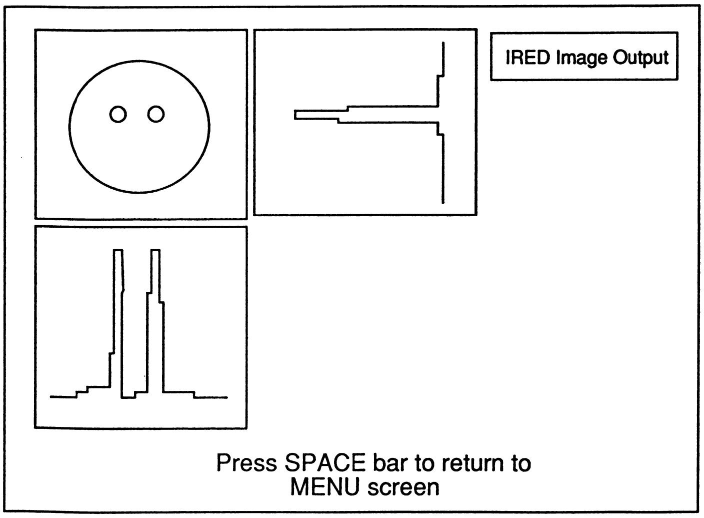
Attach the Eye Relief Adjustment
Tool A to the camera.

When set,
press the RETURN key.

Press SPACE bar to return to menu.

**3)** After communications are complete, this image data screen will be displayed. Check that the IREDs are lit. Pressing the Space Bar returns you to the IRED Menu Screen.

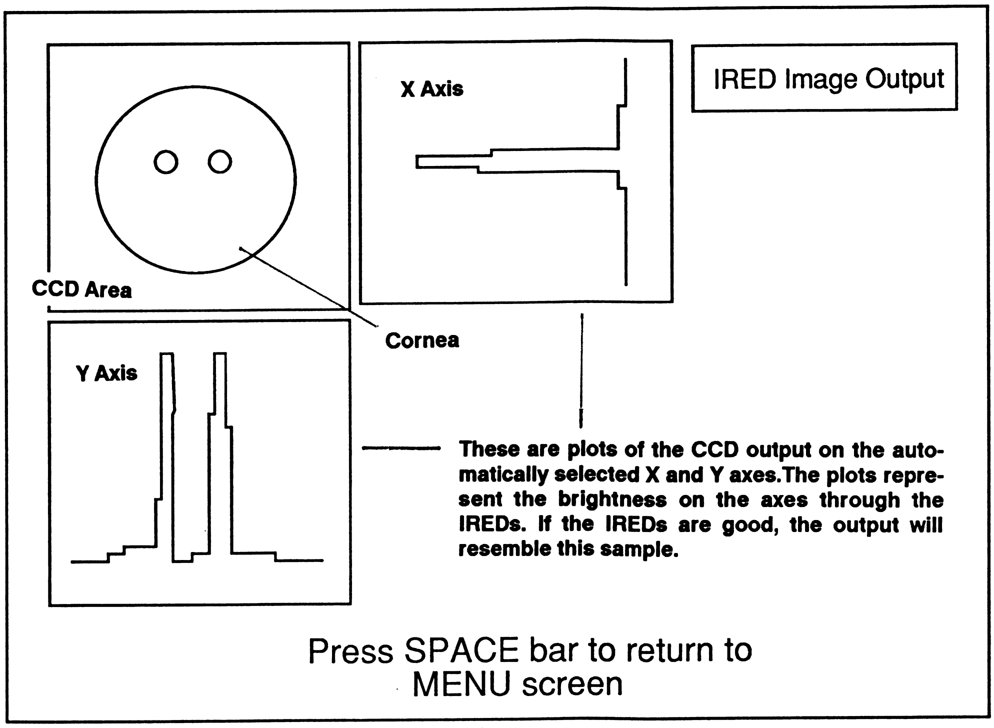
Check the Aided-eye IREDs using the same method.



Press SPACE bar to return to
MENU screen

**4)** Reading the IRED Image

This is the image of the IREDs produced by the CCD. If they are lit, calibration is possible.



**These are plots of the CCD output on the automatically selected X and Y axes.The plots represent the brightness on the axes through the IREDs. If the IREDs are good, the output will resemble this sample.**

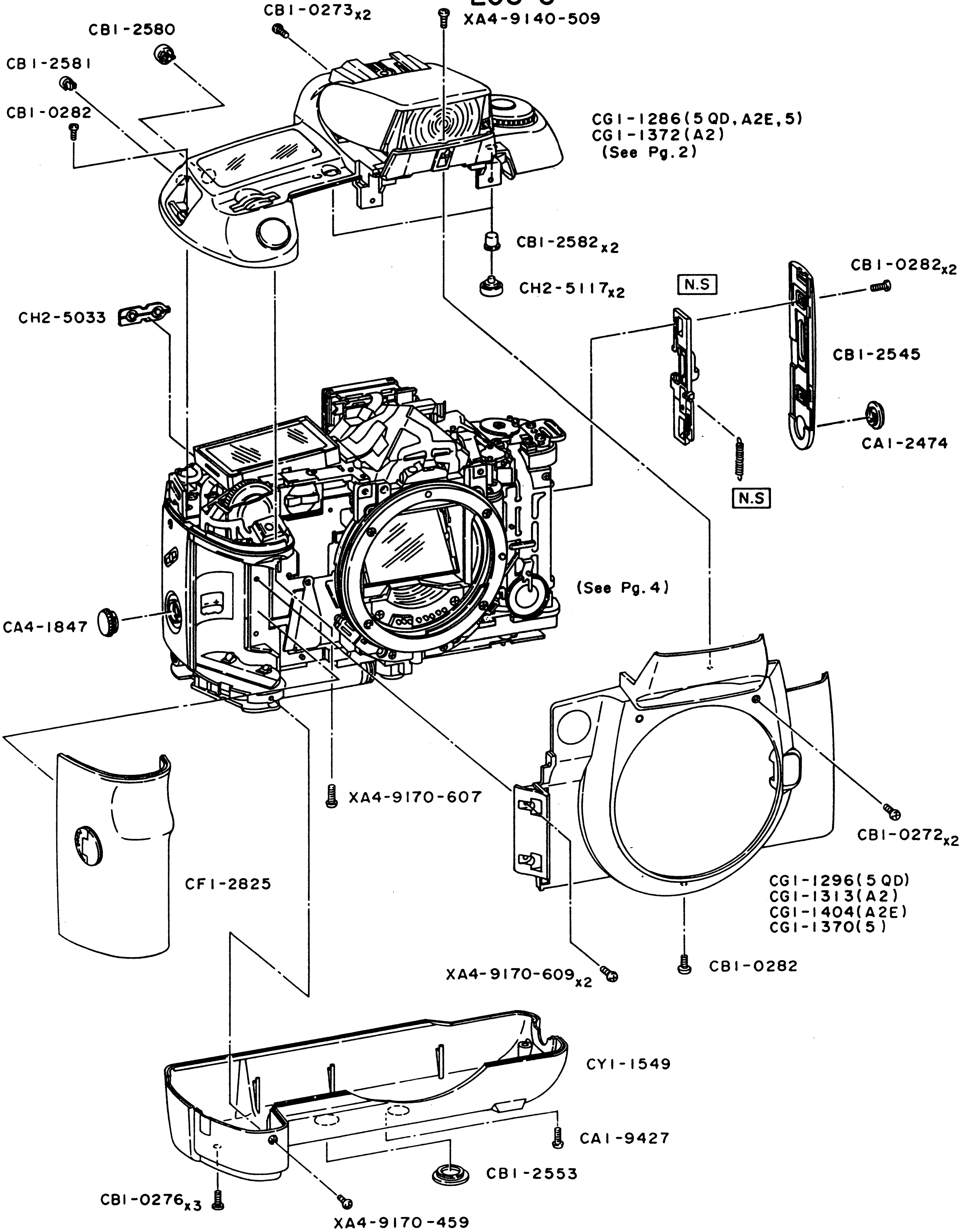
Press SPACE bar to return to
MENU screen

# MEMO

# PART 4. PARTS CATALOG

REF. NO. C12-8201
C12-8204
C12-8205
C12-8206

# CANON EOS 5 QD
# EOS A2
# EOS A2E
# EOS 5


CB1-0273x2
XA4-9140-509
CB1-2580
CB1-2581
CB1-0282
CG1-1286(5 QD, A2E, 5)
CG1-1372(A2)
(See Pg. 2)
CB1-2582x2
CH2-5117x2
N.S
CB1-0282x2
CH2-5033
CB1-2545
CA1-2474
N.S
(See Pg. 4)
CA4-1847
XA4-9170-607
CB1-0272x2
CF1-2825
CG1-1296(5 QD)
CG1-1313(A2)
CG1-1404(A2E)
CG1-1370(5)
XA4-9170-609x2
CB1-0282
CY1-1549
CA1-9427
CB1-2553
CB1-0276x3
XA4-9170-459

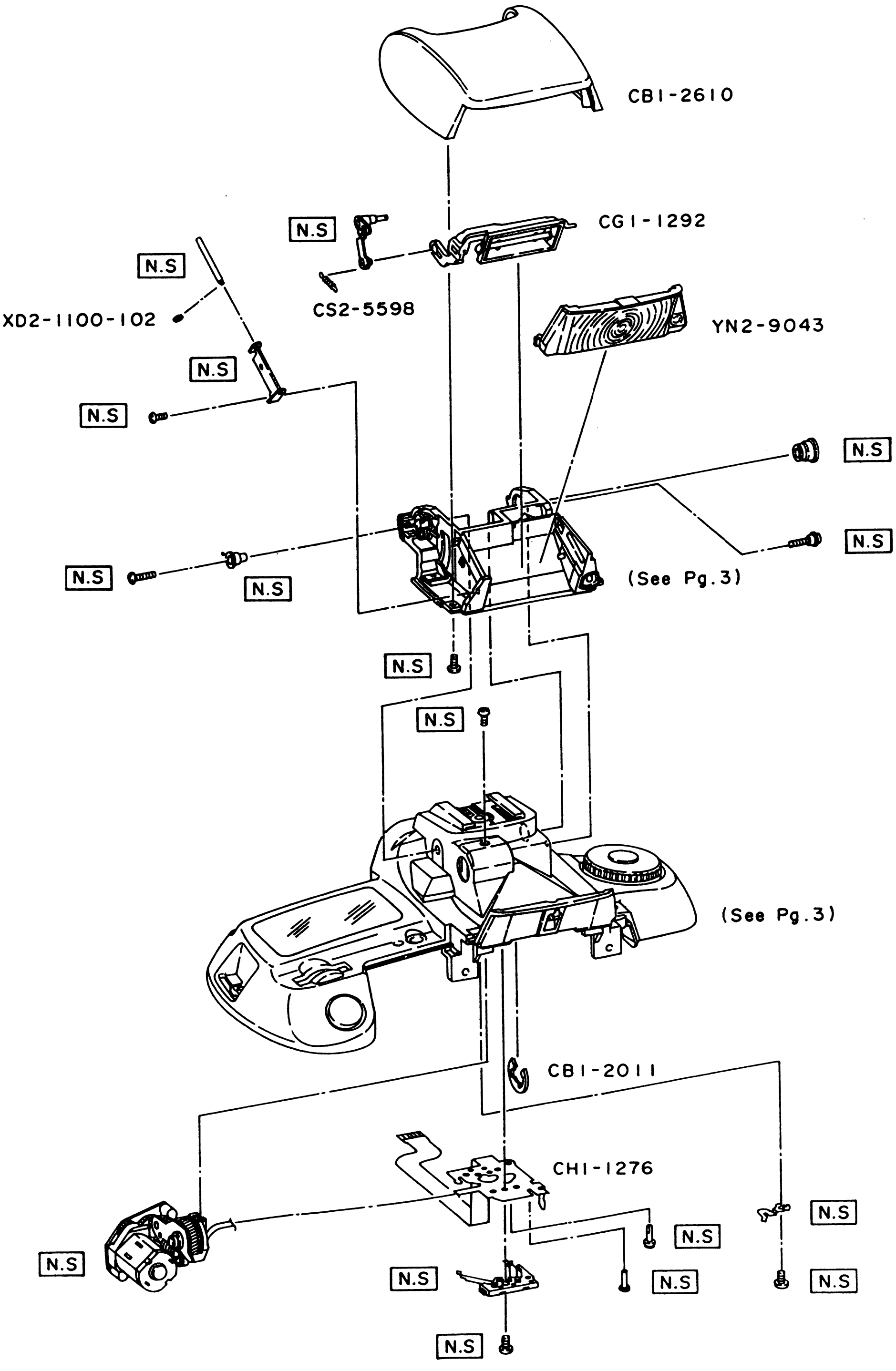
# PARTS LIST

REF. NO. C12-8201, 8204, 8205, 8206

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CA1-2474-000 | | 1 | SCREW, CROSS-RECESS, PH | |
| | CA1-9427-000 | | 1 | SCREW, CROSS-RECESS, PH | |
| | CA4-1847-000 | | 1 | CAP, TERMINAL | キャップ |
| | CB1-0272-000 | | 2 | SCREW, CROSS-RECESS, PH | |
| | CB1-0273-000 | | 2 | SCREW, CROSS-RECESS, PH | |
| | CB1-0276-000 | | 3 | SCREW, CROSS-RECESS, PH | |
| | CB1-0282-000 | | 4 | SCREW, CROSS-RECESS, PH | |
| * | CB1-2545-000 | D | 1 | COVER, LATCH | ラッチカバー |
| * | CB1-2553-000 | C | 1 | COVER, GRIP CONTACT | カバー |
| * | CB1-2580-000 | E | 1 | BUTTON, AE LOCK | ＡＥロック釦 |
| * | CB1-2581-000 | E | 1 | BUTTON, CAL | 測距点選択釦 |
| * | CB1-2582-000 | D | 2 | BUTTON; FLASH | ボタン |
| * | CF1-2825-000 | D | 1 | GRIP | グリップ |
| * | CG1-1286-000 | D | 1 | COVER ASS'Y, TOP (5, 5QD, A2E) | 上カバーユニット (5, 5QD, A2E) |
| * | CG1-1296-000 | D | 1 | PANEL ASS'Y FRONT (5QD) | 前カバーユニット (5QD) |
| * | CG1-1313-000 | D | 1 | PANEL ASS'Y FRONT (A2) | 前カバーユニット (A2) |
| * | CG1-1370-000 | D | 1 | PANEL ASS'Y FRONT (5) | 前カバーユニット (5) |
| * | CG1-1372-000 | D | 1 | COVER ASS'Y, TOP (A2) | 上カバーユニット (A2) |
| * | CG1-1404-000 | D | 1 | PANEL ASS'Y FRONT (A2E) | 前カバーユニット (A2E) |
| | CH2-5033-000 | D | 1 | CONTACT, RUBBER | AEL導電ゴム |
| | CH2-5117-000 | D | 2 | CONTACT, RUBBER | モードＳＷゴム |
| * | CY1-1549-000 | D | 1 | COVER, BASE | 下カバー |
| | XA4-9140-509 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-459 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-607 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-609 | | 2 | SCREW, CROSS-RECESS, PH | |

REF. NO. C12-8201
C12-8204
C12-8205
C12-8206

# CANON EOS 5 QD
# EOS A2
# EOS A2E
# EOS 5


CB1-2610
N.S
CG1-1292
N.S
XD2-1100-102
CS2-5598
YN2-9043
N.S
N.S
N.S
N.S
N.S
(See Pg.3)
N.S
N.S
N.S
N.S
(See Pg.3)
CB1-2011
CH1-1276
N.S
N.S
N.S
N.S
N.S
N.S
N.S

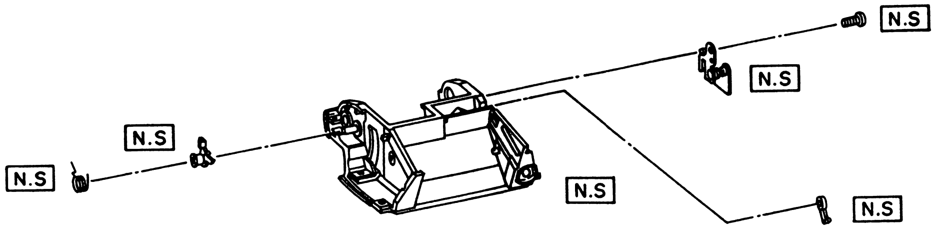
# PARTS LIST

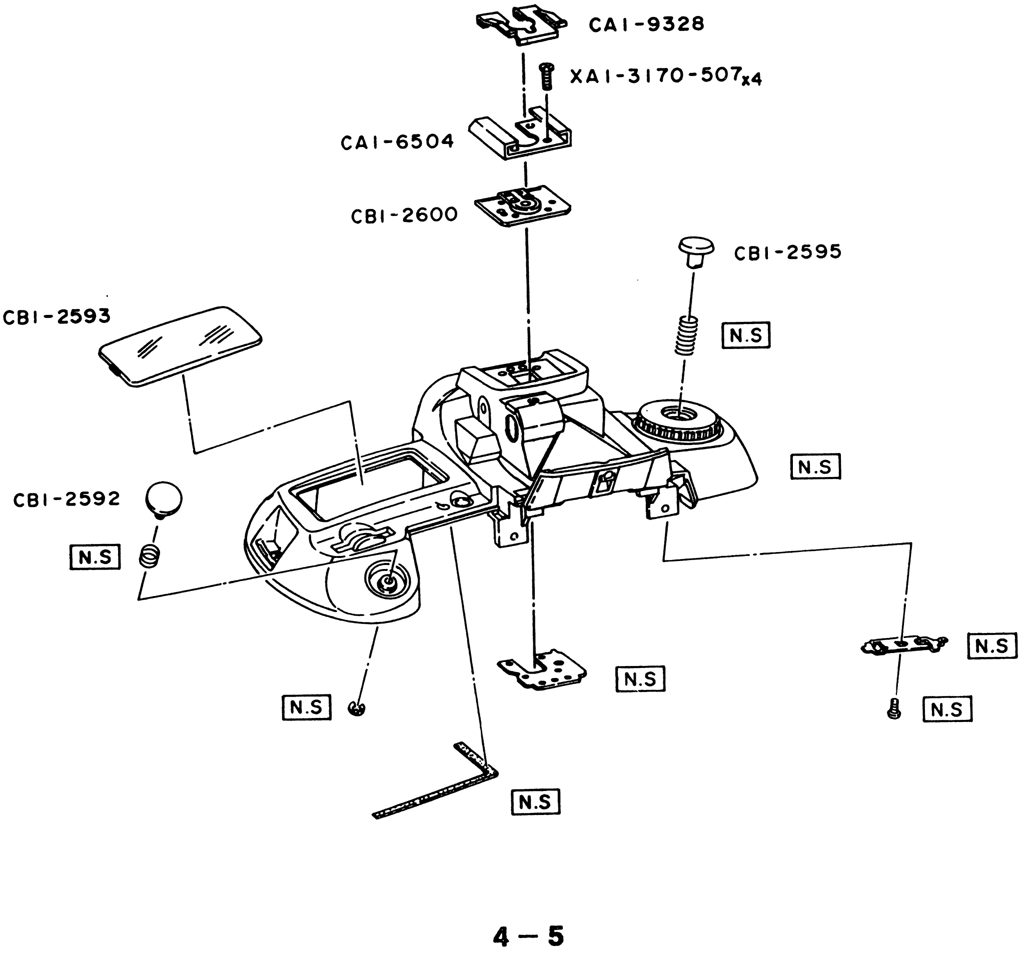
REF. NO. C12-8201, 8204, 8205, 8206

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CB1-2011-000 | E | 1 | CLASP | コードメタル緊定 |
| * | CB1-2610-000 | D | 1 | COVER, FLASH | STカバー |
| * | CG1-1292-000 | E | 1 | FLASH TUBE ASS'Y | 反射笠ユニット |
| * | CH1-1276-000 | D | 1 | ACC. SHOE FLEX | アクシューフレキ |
| * | CS2-5598-000 | D | 1 | SPRING, ZOOM | スプリング |
| | XD2-1100-102 | | 1 | E RING | Eリング |
| * | YN2-9043-000 | E | 1 | PANEL, FLASH | STパネル |

REF. NO. C12-8201
C12-8204
C12-8205
C12-8206

# CANON EOS 5 QD
# EOS A2
# EOS A2E
# EOS 5


N.S
N.S
N.S
N.S
N.S
N.S
N.S


CA1-9328
XA1-3170-507x4
CA1-6504
CB1-2600
CB1-2595
N.S
CB1-2593
N.S
CB1-2592
N.S
N.S
N.S
N.S
N.S
N.S

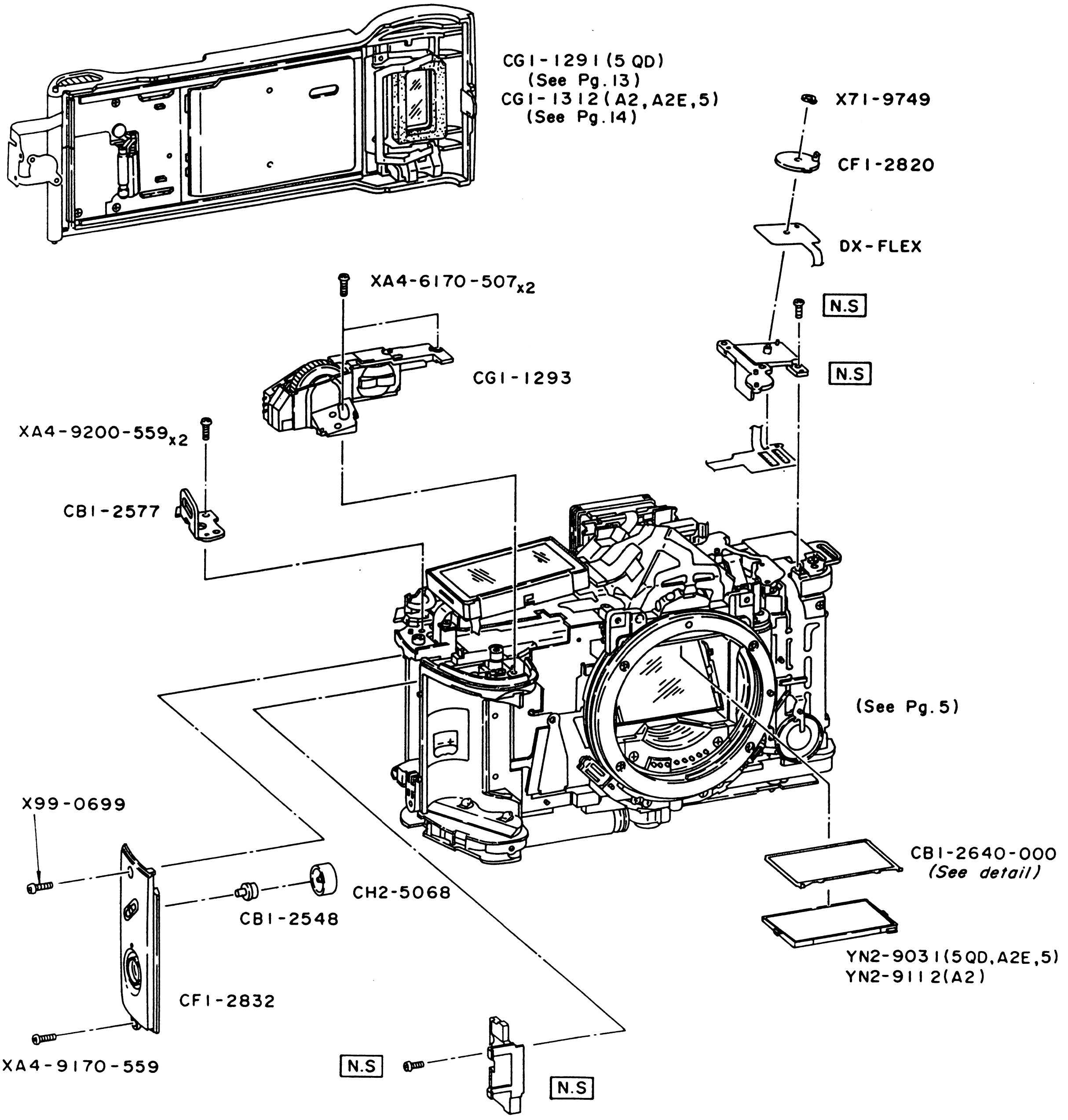
# PARTS LIST

REF. NO. C12-8201, 8204, 8205, 8206

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CA1-6504-000 | D | 1 | SHOE, ACCESSORY | アクシュー |
| | CA1-9328-000 | C | 1 | SPRING, PLATE | アクシューバネ２ |
| * | CB1-2592-000 | D | 1 | BUTTON, RELEASE | レリーズボタン |
| * | CB1-2593-000 | C | 1 | WINDOW, LCD | OLC窓 |
| * | CB1-2595-000 | D | 1 | BUTTON, MODE LOCK | モードロックボタン |
| * | CB1-2600-000 | D | 1 | BASE, ACC. SHOE | アクシューベース |
| | XA1-3170-507 | | 4 | SCREW, CROSS-RECESS, FCH | |

REF. NO. C12-8201
C12-8204
C12-8205
C12-8206

# CANON EOS 5 QD
EOS A2
EOS A2E
EOS 5


CG1-1291 (5 QD)
(See Pg. 13)
CG1-1312 (A2, A2E, 5)
(See Pg. 14)
X71-9749
CF1-2820
DX-FLEX
XA4-6170-507x2
N.S
CG1-1293
N.S
XA4-9200-559x2
CB1-2577
(See Pg. 5)
X99-0699
CB1-2640-000
(See detail)
CH2-5068
CB1-2548
YN2-9031 (5QD, A2E, 5)
YN2-9112 (A2)
CF1-2832
XA4-9170-559
N.S
N.S

CB1-2640-000 detail

| A | SIZE |
|---|---|
| 0.20±0.020 mm | (020) |
| 0.25±0.025 mm | (025) |
| 0.30±0.025 mm | (030) |
| 0.35±0.025 mm | (035) |
| 0.40±0.030 mm | (040) |

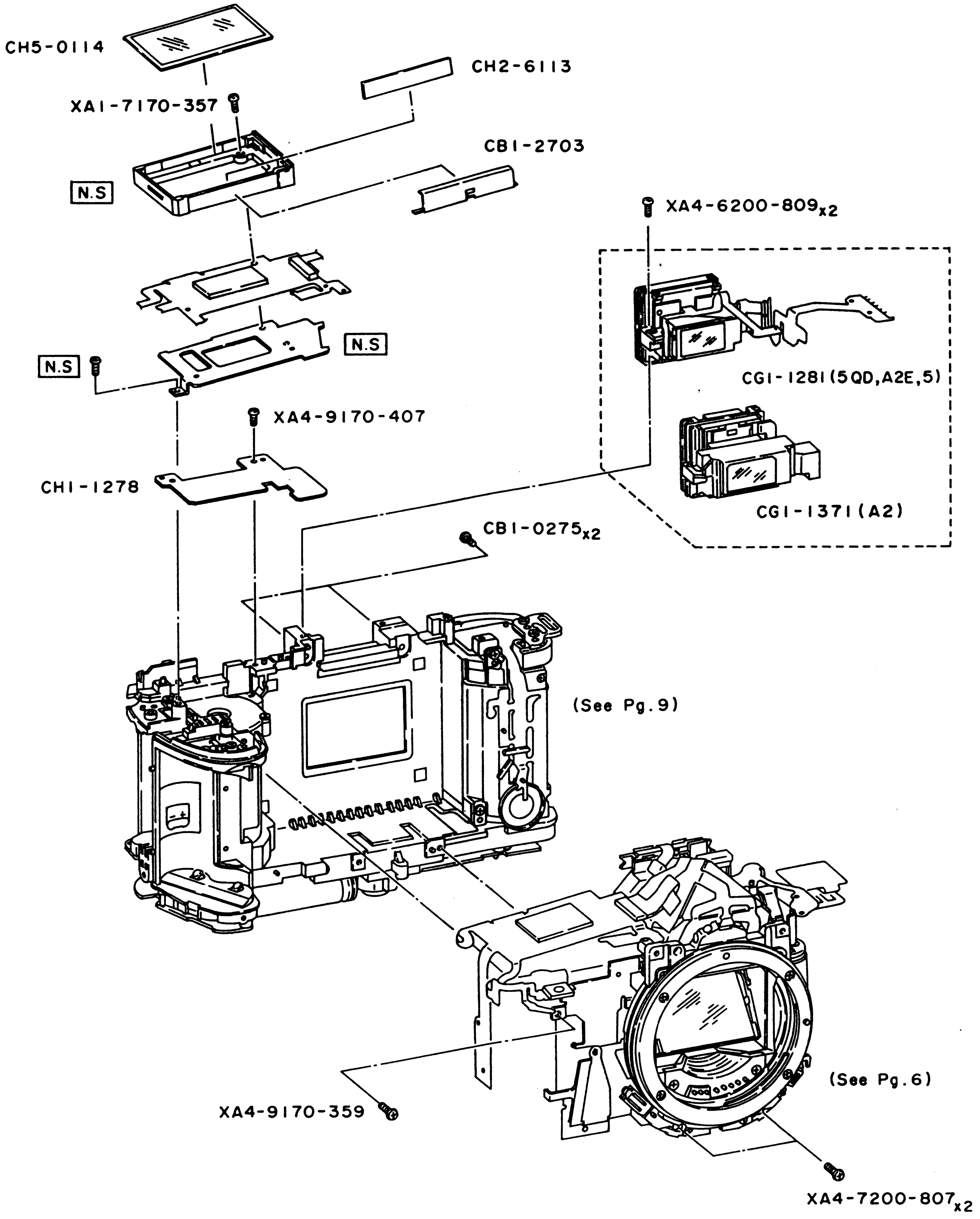
# PARTS LIST

REF. NO. C12-8201, 8204, 8205, 8206

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| * | CB1-2548-000 | E | 1 | BUTTON, REWIND | RW釦 |
| * | CB1-2577-000 | E | 1 | LUG, NECK STRAP | 縦耳環 |
| * | CB1-2640-000 | E | 1 | WASHER, FINDER BACK ADJUST (XXX) | ピントワッシャ |
| * | CF1-2820-000 | D | 1 | CONTACT, MODE | モードダイヤルユニット |
| * | CF1-2832-000 | E | 1 | COVER, HINGE | ヒンジカバー |
| * | CG1-1291-000 | E | 1 | COVER ASS'Y, QD BACK (5QD) | QD背蓋ユニット |
| * | CG1-1293-000 | D | 1 | DIAL ASS'Y | ダイヤルユニット |
| * | CG1-1312-000 | E | 1 | COVER ASS'Y, BACK (5, A2, A2E) | 背蓋ユニット |
| | CH2-5068-000 | D | 1 | SWITCH, REWIND MODE | RWスイッチ |
| | X71-9749-000 | | 1 | RETAINER | Gリング |
| | X99-0699-000 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XA4-6170-507 | | 2 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-559 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XA4-9200-559 | | 2 | SCREW, CROSS-RECESS, PH | |
| * | YN2-9031-000 | E | 1 | SCREEN, FOCUSING (5, 5QD, A2E) | ピント板 |
| * | YN2-9112-000 | E | 1 | SCREEN, FOCUSING (A2) | ピント板 |

REF. NO. C12-8201
C12-8204
C12-8205
C12-8206

# CANON EOS 5 QD
# EOS A2
# EOS A2E
# EOS 5


CH5-0114
CH2-6113
XA1-7170-357
CB1-2703
N.S
XA4-6200-809x2
N.S
N.S
CG1-1281 (5QD, A2E, 5)
XA4-9170-407
CH1-1278
CG1-1371 (A2)
CB1-0275x2
(See Pg. 9)
(See Pg. 6)
XA4-9170-359
XA4-7200-807x2

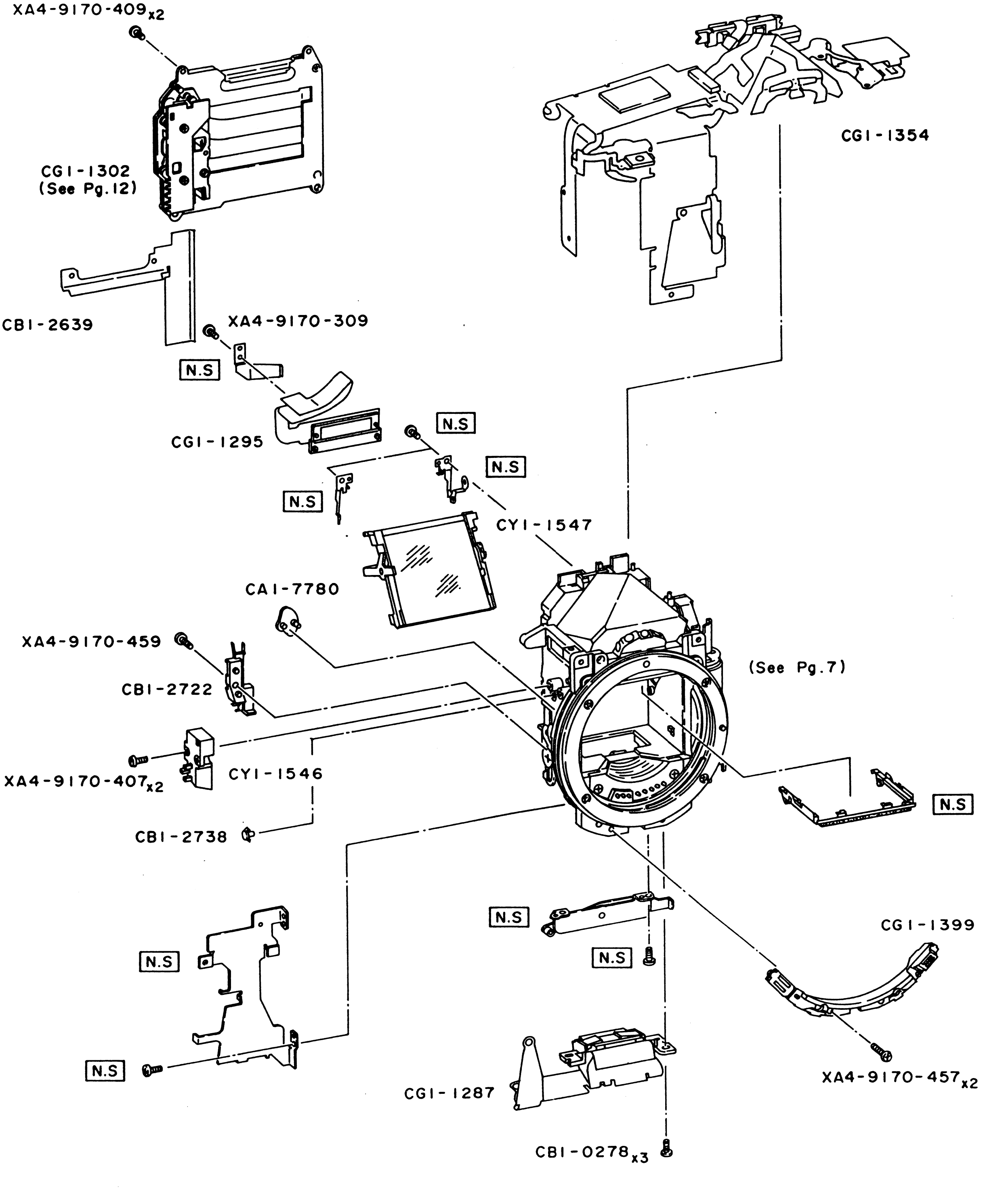
# PARTS LIST

REF. NO. C12-8201, 8204, 8205, 8206

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| * | CB1-0275-000 | | 2 | SCREW, CROSS-RECESS, PH | |
| * | CB1-2703-000 | D | 1 | SPRING, LCD HOLDER | OLCホルダー |
| * | CG1-1281-000 | D | 1 | EYEPIECE W/ES ASS'Y (5, 5QD, A2E) | 視線入力AFユニット |
| * | CG1-1371-000 | D | 1 | EYEPIECE ADJUSTMENT UNIT (A2) | 可変視度調整ユニット |
| * | CH1-1278-000 | D | 1 | M1 CBA W/IC | M1基板 |
| * | CH2-6113-000 | D | 1 | CONNECTOR, LCD | OLCコネクター |
| * | CH5-0114-000 | D | 1 | LCD | OLC |
| | XA1-7170-357 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XA4-6200-809 | E | 2 | SCREW, CROSS-RECESS, PH | |
| | XA4-7200-807 | | 2 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-359 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-407 | | 1 | SCREW, CROSS-RECESS, PH | |

REF. NO. C12-8201
C12-8204
C12-8205
C12-8206

# CANON EOS 5 QD
# EOS A2
# EOS A2E
# EOS 5


XA4-9170-409x2
CG1-1302
(See Pg.12)
CB1-2639
XA4-9170-309
N.S
CG1-1295
N.S
N.S
N.S
CY1-1547
CG1-1354
CA1-7780
XA4-9170-459
CB1-2722
(See Pg.7)
XA4-9170-407x2
CY1-1546
CB1-2738
N.S
N.S
N.S
N.S
CG1-1399
N.S
CG1-1287
XA4-9170-457x2
CB1-0278x3

# PARTS LIST

REF. NO. C12-8201, 8204, 8205, 8206

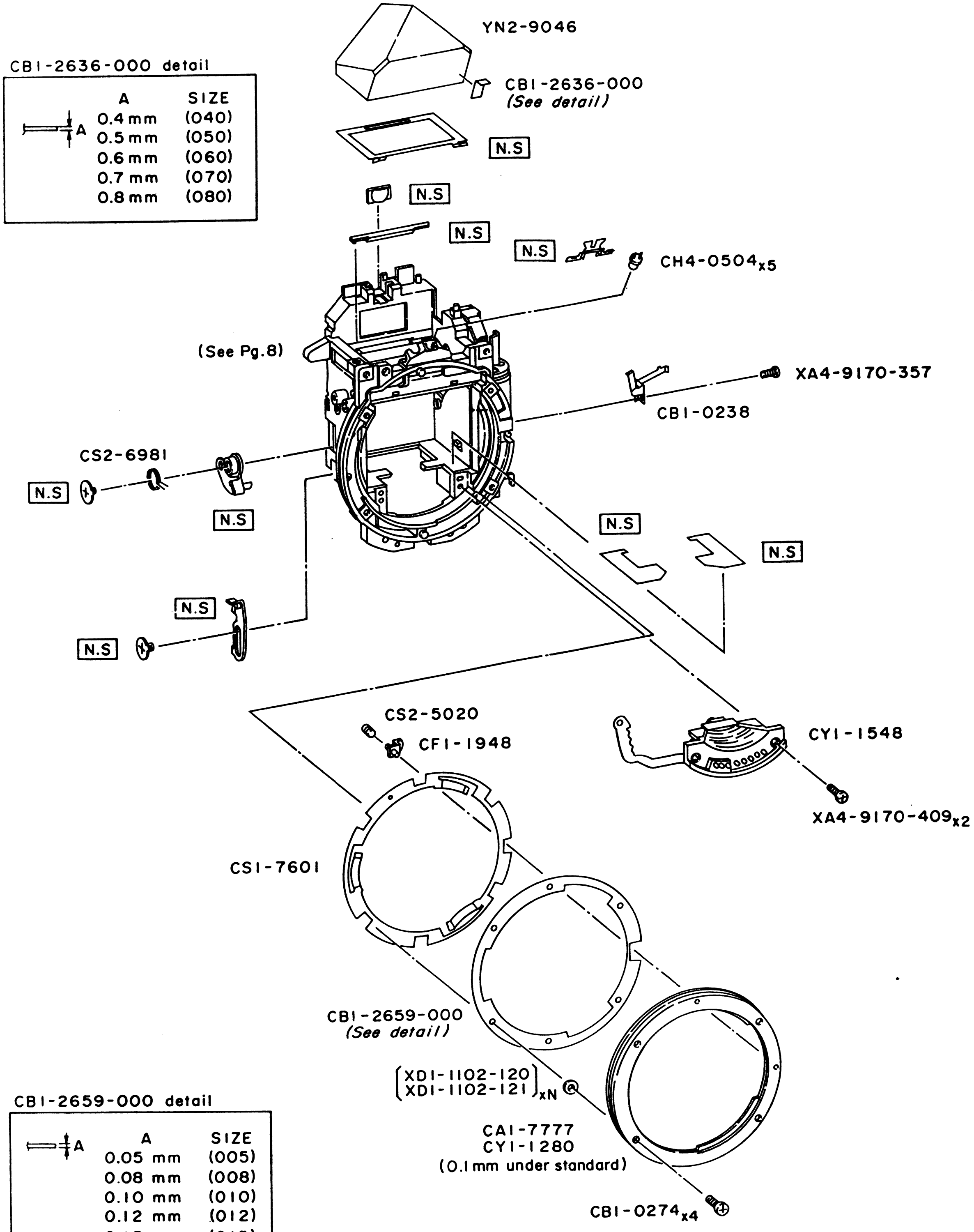
| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CA1-7780-000 | | 1 | INTERLOCK, LENS MOTOR | 検知レバー |
| | CB1-0278-000 | | 3 | SCREW, CROSS-RECESS, PH | |
| * | CB1-2639-000 | E | 1 | SHIELD, LIGHT | 遮光幕 |
| * | CB1-2722-000 | E | 1 | CONTACT, INTERLOOK | 検知SWユニット |
| * | CB1-2738-000 | D | 1 | STOPPER, SUB MIRROR | サブミラー反転ダボ |
| * | CG1-1287-000 | D | 1 | AF ASS'Y | AFユニット |
| * | CG1-1295-000 | D | 1 | DISPLAY FLEX ASS'Y | ILCユニット |
| * | CG1-1302-000 | C | 1 | SHUTTER UNIT | シャッターユニット |
| * | CG1-1354-000 | D | 1 | MAIN FLEX ASS'Y | メインフレキユニット |
| * | CG1-1399-000 | E | 1 | HV UNIT | 縦横検出ユニット |
| * | CY1-1546-000 | D | 1 | SUPER INPOSE ASS'Y | スーパーインポーズユニット |
| * | CY1-1547-000 | D | 1 | MIRROR ASS'Y | ミラーユニット |
| | XA4-9170-309 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-407 | | 2 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-409 | | 2 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-457 | | 2 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-459 | | 1 | SCREW, CROSS-RECESS, PH | |

REF. NO. C12-8201
C12-8204
C12-8205
C12-8206

# CANON EOS 5 QD
# EOS A2
# EOS A2E
# EOS 5

CB1-2636-000 detail

| A | SIZE |
|---|---|
| 0.4 mm | (040) |
| 0.5 mm | (050) |
| 0.6 mm | (060) |
| 0.7 mm | (070) |
| 0.8 mm | (080) |


YN2-9046
CB1-2636-000
(See detail)
N.S
N.S
N.S
N.S
CH4-0504x5
(See Pg.8)
XA4-9170-357
CB1-0238
CS2-6981
N.S
N.S
N.S
N.S
N.S
N.S
N.S
CS2-5020
CF1-1948
CY1-1548
XA4-9170-409x2
CS1-7601
CB1-2659-000
(See detail)
XD1-1102-120
XD1-1102-121 xN
CA1-7777
CY1-1280
(0.1 mm under standard)
CB1-0274x4

CB1-2659-000 detail

| A | SIZE |
|---|---|
| 0.05 mm | (005) |
| 0.08 mm | (008) |
| 0.10 mm | (010) |
| 0.12 mm | (012) |
| 0.15 mm | (015) |
| 0.18 mm | (018) |

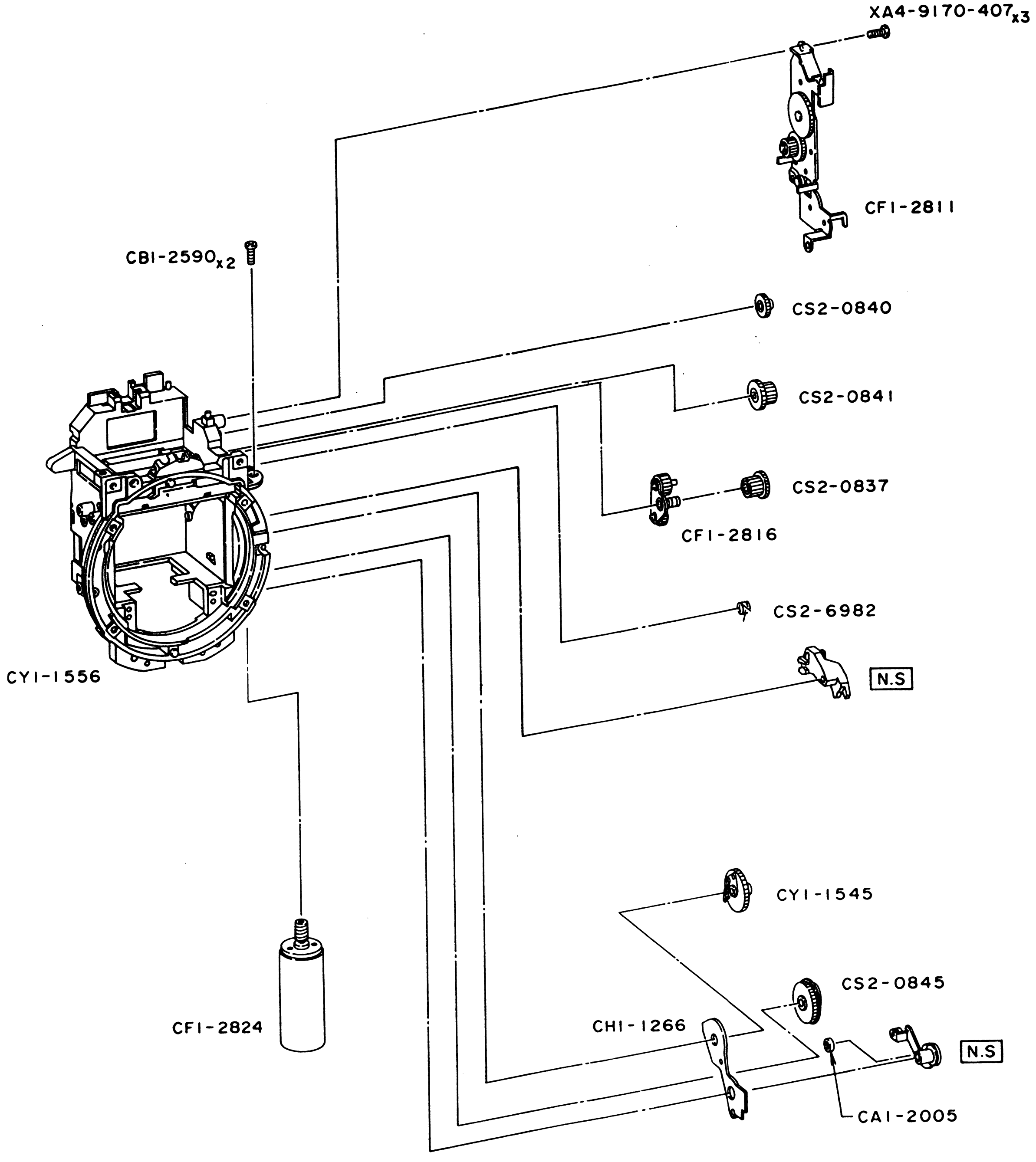
# PARTS LIST

REF. NO. C12-8201, 8204, 8205, 8206

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CA1-7777-000 | | 1 | MOUNT, BODY | マウント |
| | CB1-0238-000 | | 1 | PLATE, GND | GNDラグ板 |
| | CB1-0274-000 | | 4 | SCREW, CROSS-RECESS, PH | |
| | CB1-2636-000 | D | 1 | SPACER (XXX) | マウントスペーサー |
| | CB1-2659-000 | E | 1 | SPACER, MOUNT (XXX) | マウントスペーサー |
| | CF1-1948-000 | E | 1 | LEVER, LENS LOCK | ロックピン |
| | CH4-0504-000 | E | 5 | SI LED | スーパーインポーズLED |
| | CS1-7601-000 | D | 1 | SPRING, MOUNT | MIFバネ |
| | CS2-5020-000 | E | 1 | SPRING, COIL | ロックピンバネ |
| * | CS2-6981-000 | E | 1 | SPRING, COIL | スプリング |
| | CY1-1280-000 | | 1 | MOUNT, BODY | マウント |
| * | CY1-1548-000 | D | 1 | MOUNT CONTACT ASS'Y | 接点座ユニット |
| | XA4-9170-357 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-409 | | 2 | SCREW, CROSS-RECESS, PH | |
| | XD1-1102-120 | | 1 | WASHER | ワッシャー |
| | XD1-1102-121 | | 1 | WASHER | ワッシャー |
| * | YN2-9046-000 | E | 1 | PENTAPRISM | ペンタプリズム |

# CANON EOS 5 QD
# EOS A2
# EOS A2E
# EOS 5

REF. NO. C12-8201
C12-8204
C12-8205
C12-8206


XA4-9170-407x3
CF1-2811
CB1-2590x2
CS2-0840
CS2-0841
CS2-0837
CF1-2816
CS2-6982
N.S
CY1-1556
CY1-1545
CS2-0845
CF1-2824
CH1-1266
N.S
CA1-2005

# PARTS LIST

REF. NO. C12-8201, 8204, 8205, 8206

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CA1-2005-000 | E | 1 | COLLAR, SHUTTER | コロ |
| * | CB1-2590-000 | | 2 | SCREW, CROSS-RECESS, PH | |
| * | CF1-2811-000 | E | 1 | PLATE ASS'Y, GEAR BASE | M2地板ユニット |
| * | CF1-2816-000 | E | 1 | GEAR ASS'Y, 1ST PLANETARY | 前板遊星ユニット |
| * | CF1-2824-000 | E | 1 | M2 MOTOR ASS'Y | M2モーターユニット |
| * | CH1-1266-000 | E | 1 | BOARD, PHASE CIRCUIT | 位相基板 |
| * | CS2-0837-000 | E | 1 | GEAR, SUN | 太陽ギヤ |
| * | CS2-0840-000 | E | 1 | GEAR1, IDLE | アイドルギヤ１ |
| * | CS2-0841-000 | E | 1 | GEAR1, CHARGE | チャージギヤ１ |
| * | CS2-0845-000 | E | 1 | GEAR, CHARGE CAM | チャージカムギヤ |
| * | CS2-6982-000 | E | 1 | SPRING, MIRROR UP | ミラーアップバネ |
| * | CY1-1545-000 | E | 1 | GEAR, MIRROR CAM | ミラーカムギア |
| * | CY1-1556-000 | E | 1 | MIRROR BOX UNIT | 前板ユニット |
| | XA4-9170-407 | | 3 | SCREW, CROSS-RECESS, PH | |

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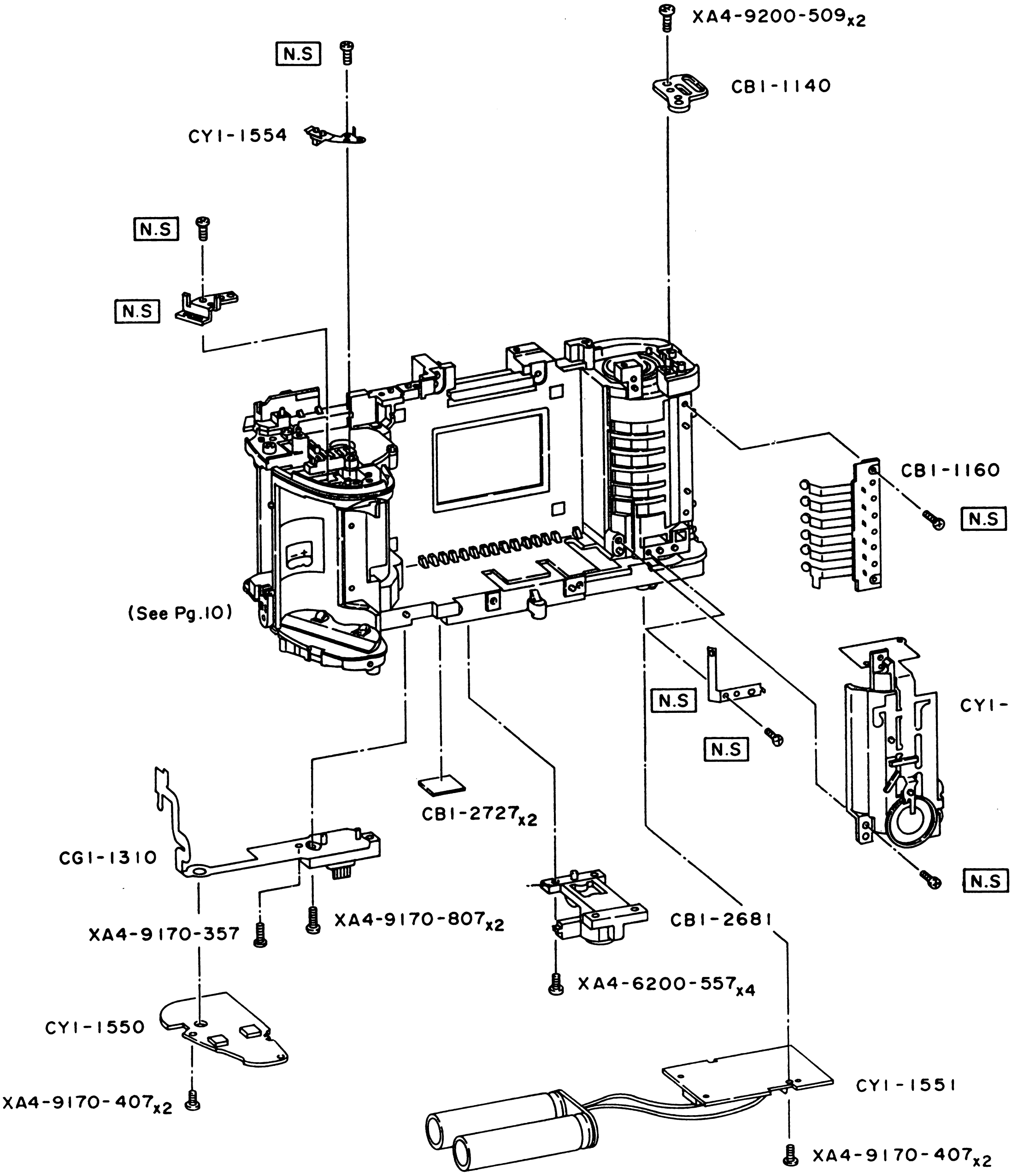
# CANON EOS 5 QD
# EOS A2
# EOS A2E
# EOS 5

REF. NO. C12-8201
C12-8204
C12-8205
C12-8206


XA4-9200-509x2
N.S
CB1-1140
CY1-1554
N.S
N.S
CB1-1160
N.S
(See Pg.10)
N.S
CY1-1555
N.S
CB1-2727x2
CG1-1310
N.S
XA4-9170-357
XA4-9170-807x2
CB1-2681
XA4-6200-557x4
CY1-1550
CY1-1551
XA4-9170-407x2
XA4-9170-407x2

# PARTS LIST

REF. NO. C12-8201, 8204, 8205, 8206

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CB1-1140-000 | | 1 | LUG, NECK STRAP | 横耳環 |
| | CB1-1160-000 | E | 1 | CONTACT, DX | DX接片 |
| * | CB1-2681-000 | E | 1 | SOCKET, TRIPOD | 三脚ネジ |
| * | CB1-2727-000 | C | 2 | CUSHION | クッション |
| | CB1-6200-557 | | 4 | SCREW, CROSS-RECESS, PH | |
| * | CG1-1310-000 | E | 1 | BOTTOM FLEX ASS'Y | 下面フレキ |
| * | CY1-1550-000 | E | 1 | DC/DC ASS'Y | DC/DCユニット |
| * | CY1-1551-000 | C | 1 | FLASH ASS'Y | ストロボユニット |
| * | CY1-1554-000 | E | 1 | CONTACT, RESET | リセット接片 |
| * | CY1-1555-000 | E | 1 | DX COVER ASS'Y | DXカバーユニット |
| | XA4-9170-357 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-407 | | 4 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-807 | | 2 | SCREW, CROSS-RECESS, PH | |
| | XA4-9200-509 | | 2 | SCREW, CROSS-RECESS, PH | |

REF. NO. C12-8201
C12-8204
C12-8205
C12-8206

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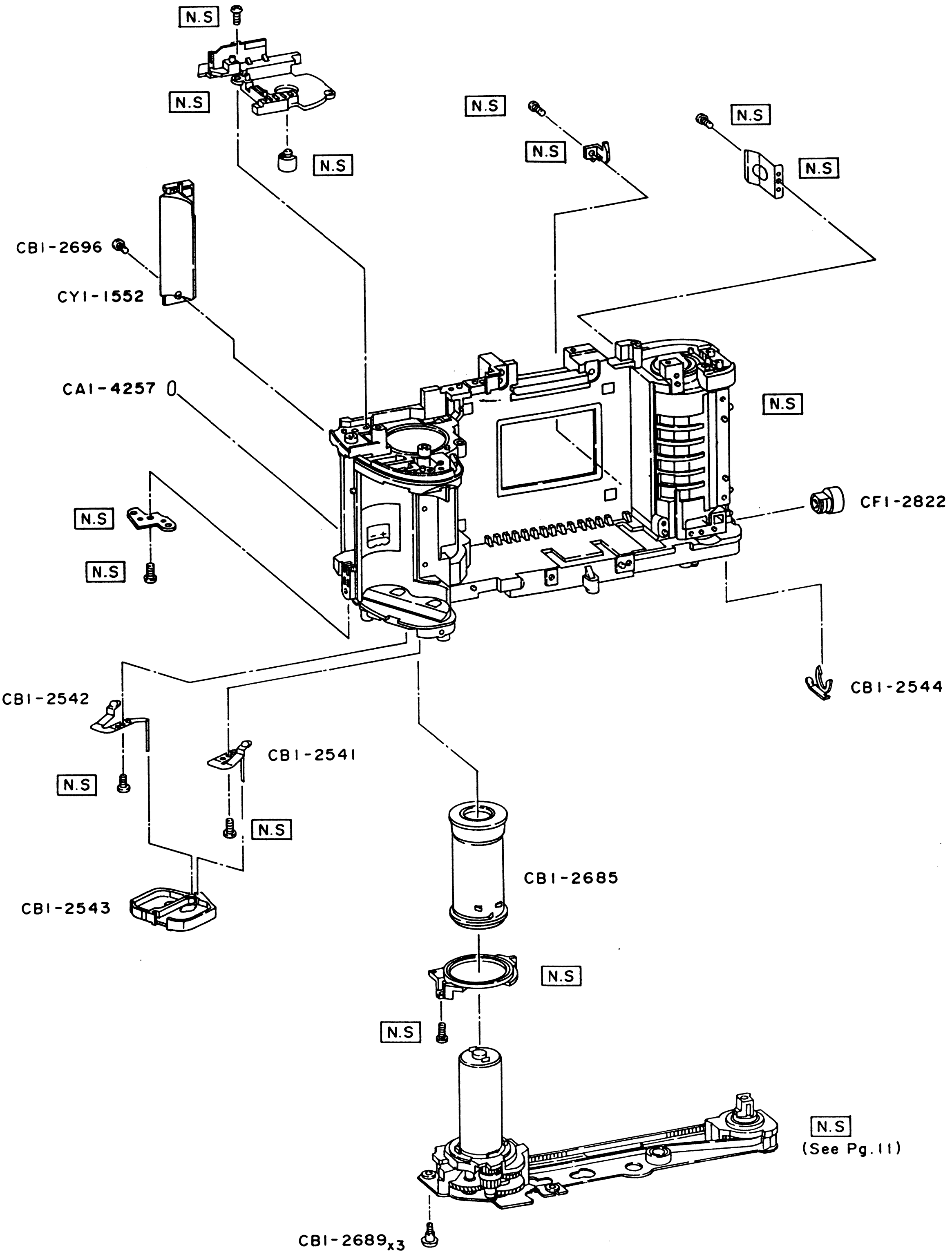
# CANON EOS 5 QD
# EOS A2
# EOS A2E
# EOS 5


N.S
N.S
N.S
N.S
N.S
N.S
N.S
CB1-2696
CY1-1552
CA1-4257
N.S
N.S
N.S
CF1-2822
CB1-2544
CB1-2542
CB1-2541
N.S
N.S
CB1-2543
CB1-2685
N.S
N.S
N.S
(See Pg.11)
CB1-2689x3

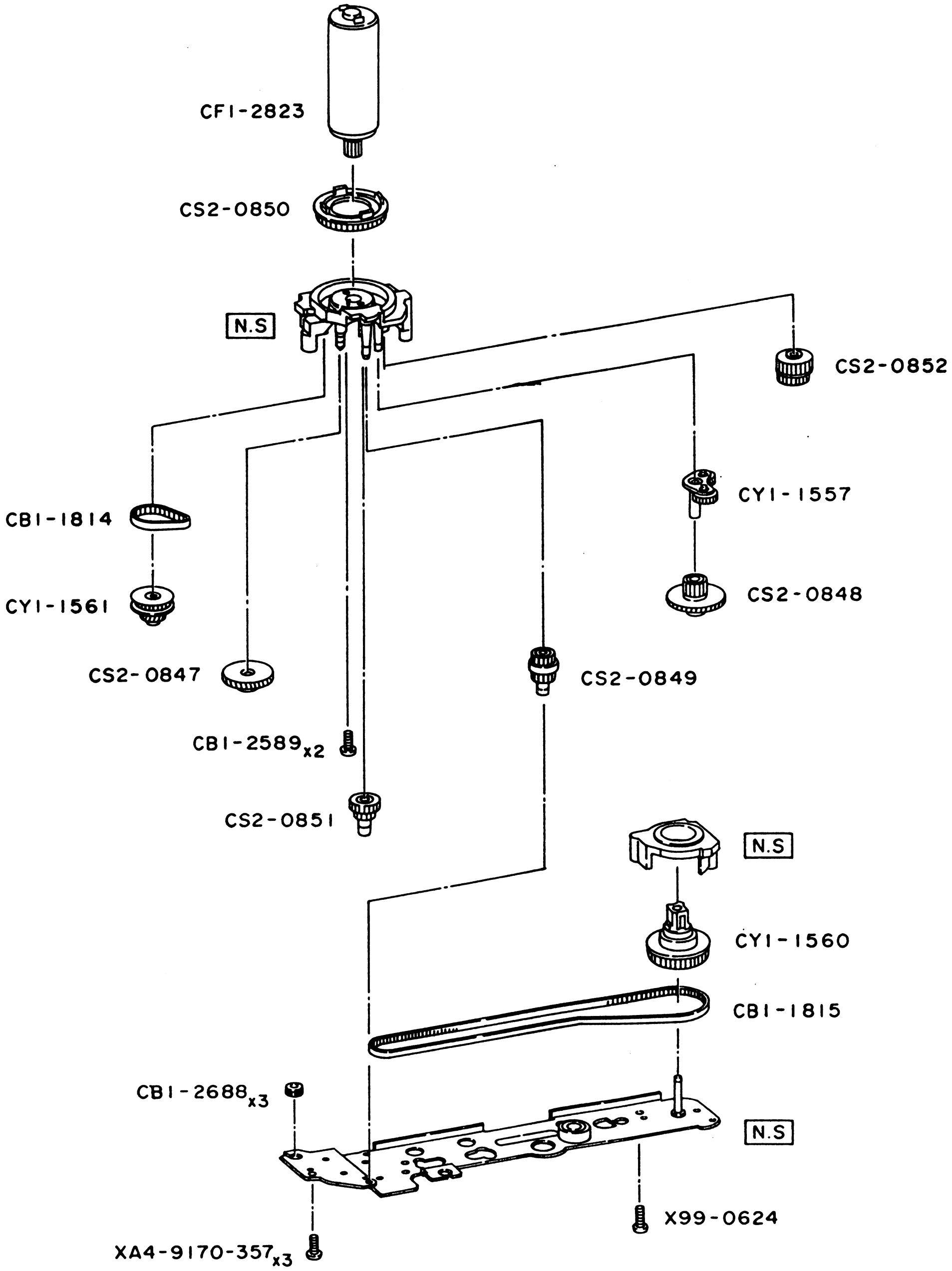
# PARTS LIST

REF. NO. C12-8201, 8204, 8205, 8206

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CA1-4257-000 | | 1 | SEAL, FILM | フィルム先端シール |
| * | CB1-2541-000 | E | 1 | CONTACT, BATTERY (+) | 電池接片 (+) |
| * | CB1-2542-000 | E | 1 | CONTACT, BATTERY (-) | 電池接片 (-) |
| * | CB1-2543-000 | E | 1 | COVER, BATTERY CONTACT | 電池接片蓋 |
| * | CB1-2544-000 | C | 1 | RING, P. C TERMINAL | P. Cリング |
| * | CB1-2685-000 | E | 1 | SPOOL | スプール |
| * | CB1-2689-000 | | 3 | SCREW, CROSS-RECESS, PH | |
| * | CB1-2696-000 | | 1 | SCREW, CROSS-RECESS, PH | |
| * | CF1-2822-000 | B | 1 | TERMINAL, P. C. | P. Cターミナル |
| * | CY1-1552-000 | E | 1 | SIGNAL UNIT | 信号ユニット |

REF. NO. C12-8201
C12-8204
C12-8205
C12-8206

# CANON EOS 5 QD
# EOS A2
# EOS A2E
# EOS 5


CF1-2823
CS2-0850
N.S
CS2-0852
CY1-1557
CB1-1814
CY1-1561
CS2-0848
CS2-0847
CS2-0849
CB1-2589x2
CS2-0851
N.S
CY1-1560
CB1-1815
CB1-2688x3
N.S
X99-0624
XA4-9170-357x3

# PARTS LIST

REF. NO. C12-8201, 8204, 8205, 8206

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CB1-1814-000 | | 1 | BELT, GEAR DRIVE | Pベルト |
| | CB1-1815-000 | | 1 | BELT, GEAR DRIVE | REWベルト |
| * | CB1-2589-000 | | 2 | SCREW, CROSS-RECESS, PH | |
| * | CB1-2688-000 | E | 3 | MOUNT, VIBRATION | ブッシュ |
| * | CF1-2823-000 | E | 1 | M1 MOTOR UNIT | M1モーターユニット |
| * | CS2-0847-000 | E | 1 | GEAR, WIND 2ND | WD第２ギヤ |
| * | CS2-0848-000 | E | 1 | GEAR, WIND SUN | WD太陽ギア |
| * | CS2-0849-000 | E | 1 | GEAR, SPOOL DRIVE | S伝達ギヤ |
| * | CS2-0850-000 | E | 1 | GEAR, SPOOL DRIVE | S伝達ギヤ |
| * | CS2-0851-000 | E | 1 | GEAR, REWIND DRIVE | REW伝達ギヤ |
| * | CS2-0852-000 | E | 1 | GEAR, REWIND | REWプーリー |
| * | CY1-1557-000 | E | 1 | WIND, PLANETARY GEAR ASS'Y | WD遊星ギヤユニット |
| * | CY1-1560-000 | E | 1 | FORK ASS'Y | フォークユニット |
| * | CY1-1561-000 | D | 1 | GEAR, WIND 1ST | WD第１ギヤユニット |
| | X99-0624-000 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XA4-9170-357 | | 3 | SCREW, CROSS-RECESS, PH | |

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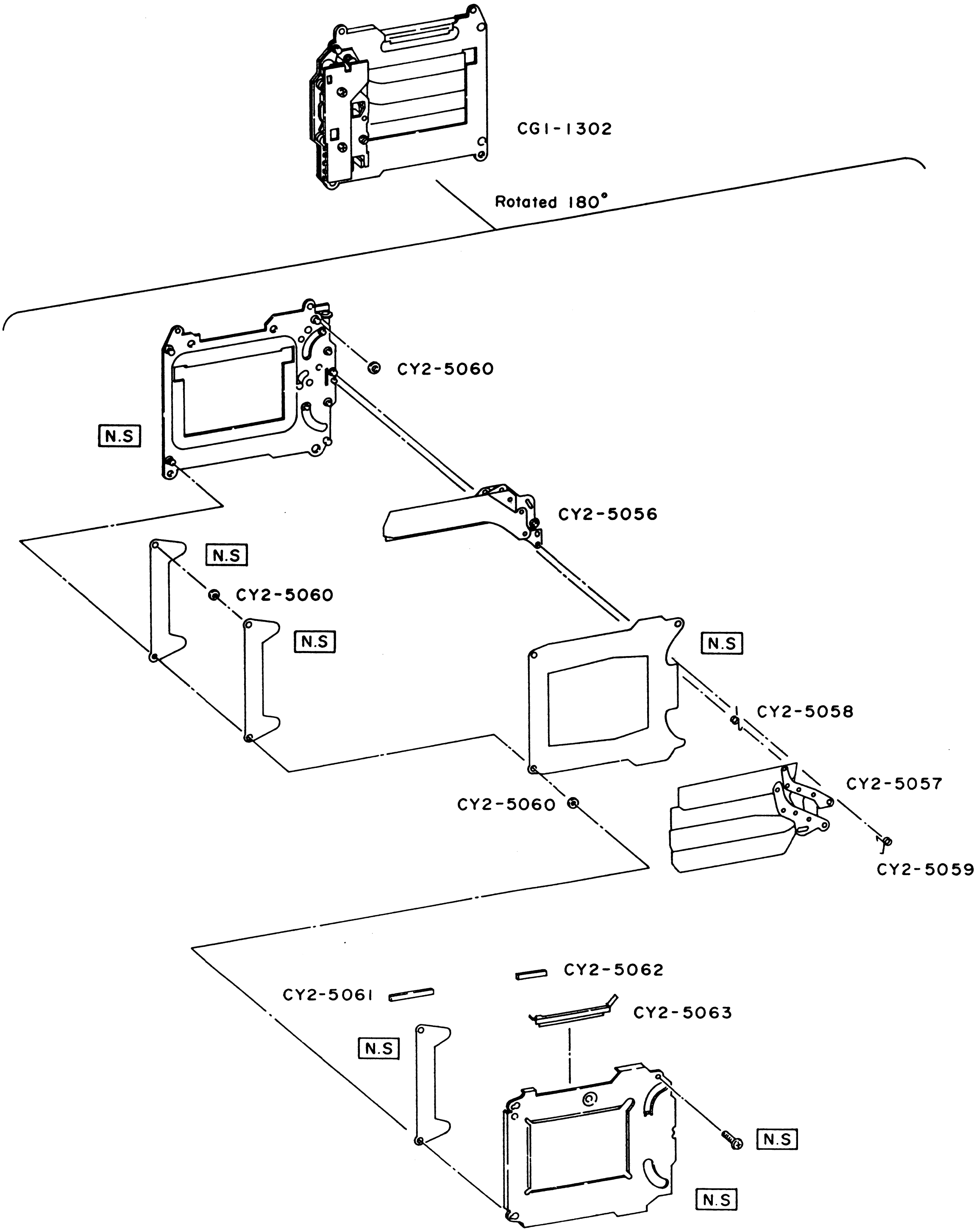
REF. NO. C12-8201
C12-8204
C12-8205
C12-8206

# CANON EOS 5 QD
# EOS A2
# EOS A2E
# EOS 5


CG1-1302
Rotated 180°
CY2-5060
N.S
CY2-5056
N.S
CY2-5060
N.S
N.S
CY2-5058
CY2-5057
CY2-5060
CY2-5059
CY2-5062
CY2-5061
CY2-5063
N.S
N.S
N.S

# PARTS LIST

REF. NO. C12-8201, 8204, 8205, 8206

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CG1-1302-000 | D | 1 | SHUTTER UNIT | シャッターユニット |
| * | CY2-5056-000 | C | 1 | CURTAIN, SHUTTER (2ND) | 後幕 |
| * | CY2-5057-000 | C | 1 | CURTAIN, SHUTTER (1ST) | 先幕 |
| * | CY2-5058-000 | D | 1 | SPRING | スプリング |
| * | CY2-5059-000 | E | 1 | SPRING | スプリング |
| * | CY2-5060-000 | E | 3 | WASHER | ワッシャ |
| * | CY2-5061-000 | E | 1 | CUSION | クッション |
| * | CY2-5062-000 | E | 1 | CUSION | クッション |
| * | CY2-5063-000 | E | 1 | HOLDER, SHUTTER CURTAIN | ホルダー |

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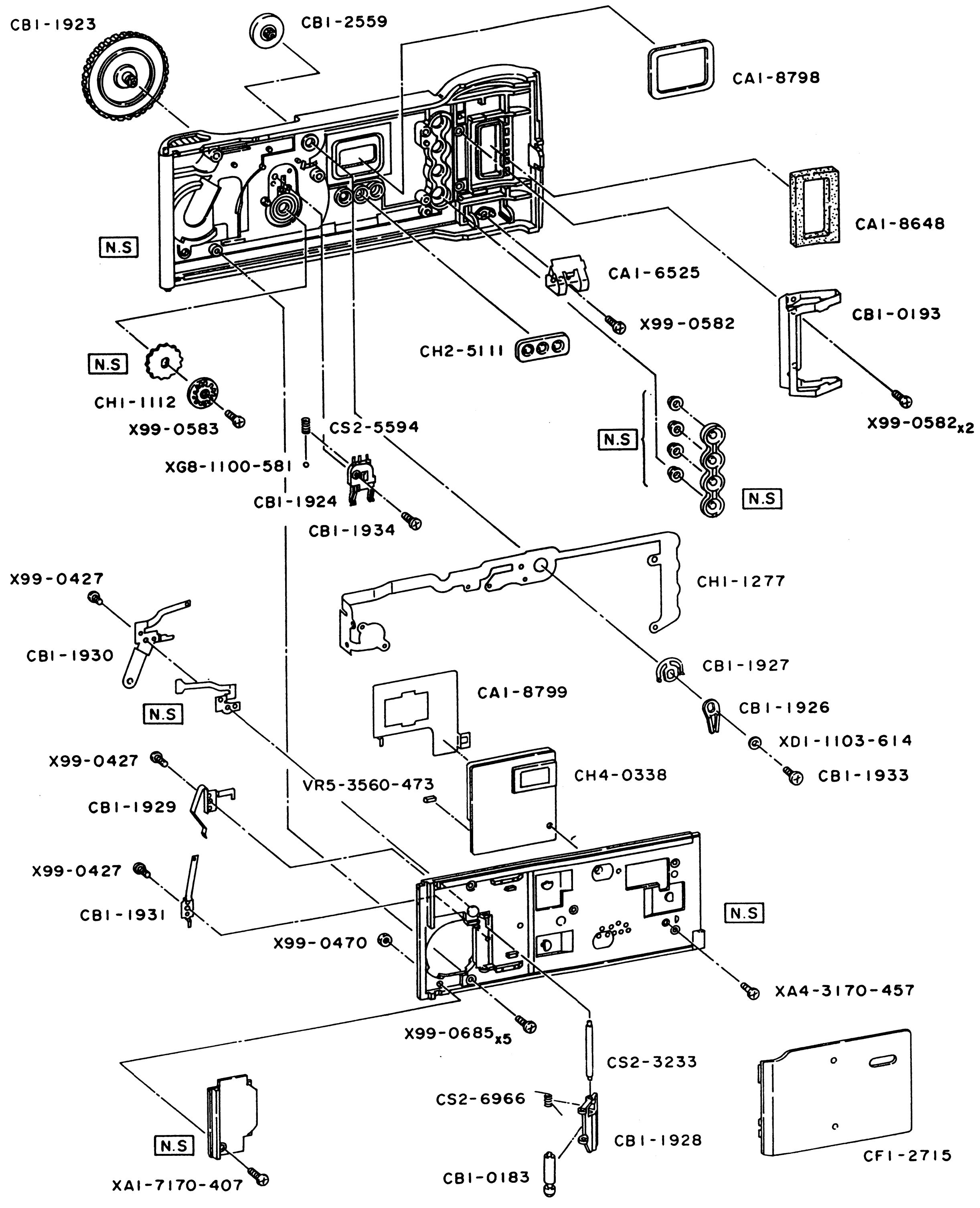
# CANON EOS 5 QD


CB1-1923
CB1-2559
CA1-8798
CA1-8648
N.S
CA1-6525
CB1-0193
X99-0582
CH2-5111
N.S
CH1-1112
X99-0583
CS2-5594
X99-0582x2
XG8-1100-581
N.S
CB1-1924
N.S
CB1-1934
X99-0427
CH1-1277
CB1-1930
CB1-1927
CA1-8799
N.S
CB1-1926
XD1-1103-614
X99-0427
CH4-0338
CB1-1933
VR5-3560-473
CB1-1929
X99-0427
N.S
CB1-1931
X99-0470
XA4-3170-457
X99-0685x5
CS2-3233
CS2-6966
N.S
CB1-1928
CF1-2715
CB1-0183
XA1-7170-407

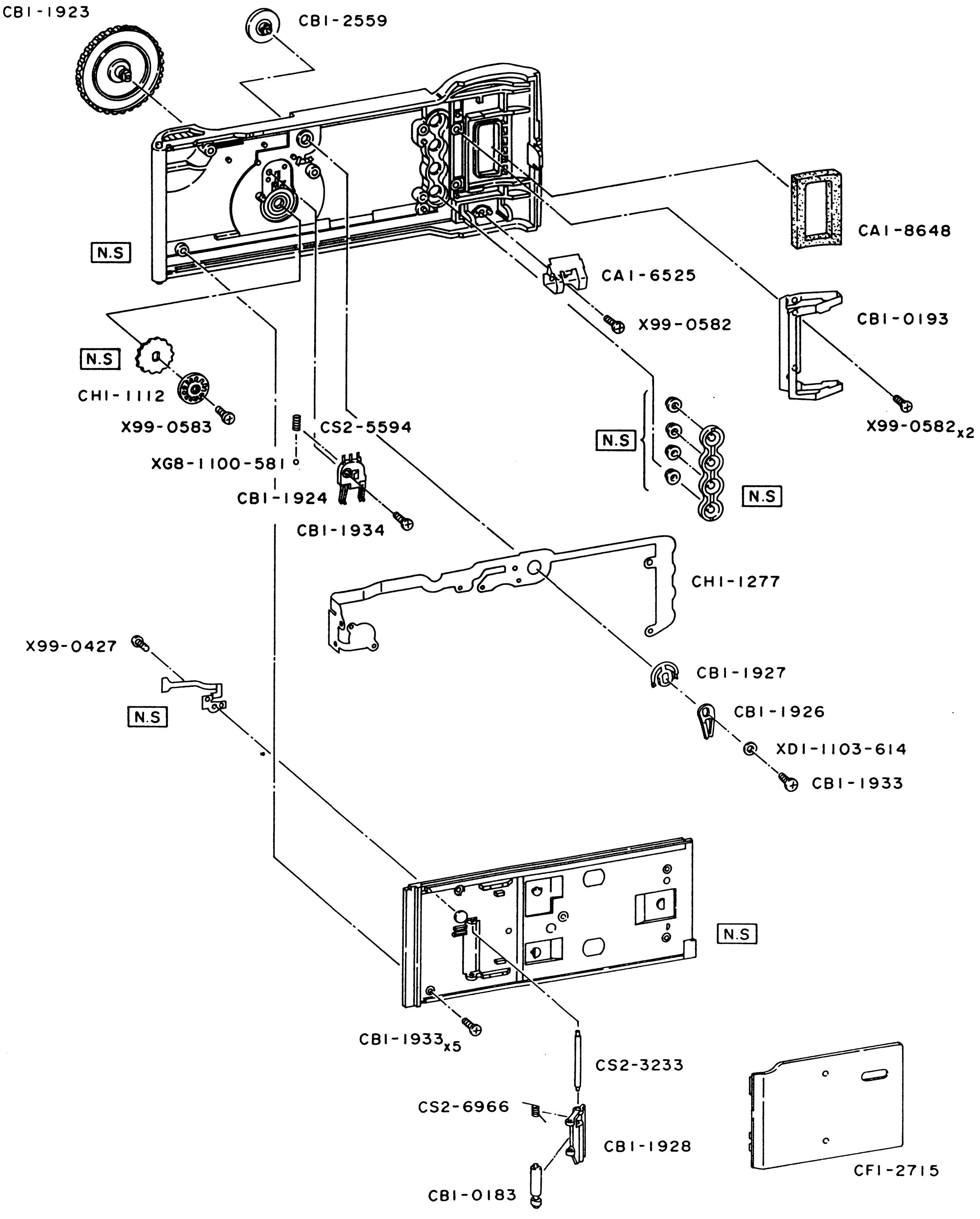
# PARTS LIST

REF. NO. C12-8201

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CA1-6525-000 | E | 1 | PLATE, SPRING | P押上げバネ |
| | CA1-8648-000 | D | 1 | SHIELD, LIGHT | Dモルト |
| | CA1-8798-000 | E | 1 | LIGHT SHIELD, DATE WINDOW | デート遮光材 |
| | CA1-8799-000 | E | 1 | SHIELD, DATE | デートシールド板 |
| | CB1-0183-000 | D | 1 | ROLLER-1, BACK COVER GUIDE | 背蓋ガイドローラー1 |
| | CB1-0193-000 | E | 1 | SPRING, CARTRIDGE | パトローネ押え |
| | CB1-1923-000 | D | 1 | DIAL, REAR INPUT | Sダイヤル |
| | CB1-1924-000 | E | 1 | CONTACT, DIAL | Sダイヤル接片 |
| | CB1-1926-000 | E | 1 | DETENT, DIAL | Sダイヤルクリック |
| | CB1-1927-000 | E | 1 | CONTACT, DIAL LOCK SWITCH | SダイヤルSW接片 |
| | CB1-1928-000 | E | 1 | HOLDER, ROLLER | 背蓋可動レバー |
| | CB1-1929-000 | E | 1 | CONTACT DATE BATTERY (+) | DATE電池接片 (+) |
| | CB1-1930-000 | E | 1 | CONTACT DATE BATTERY (-) | DATE電池接片 (-) |
| | CB1-1931-000 | E | 1 | CONTACT BASE, TRIGGER | DATE信号接片 |
| | CB1-1933-000 | | 1 | SCREW, CROSS-RECESS, PH | |
| | CB1-1934-000 | | 1 | SCREW, CROSS-RECESS, PH | |
| * | CB1-2559-000 | D | 1 | CAM, REAR INPUT DIAL | SダイヤルSW |
| | CF1-2715-000 | D | 1 | PLATE, PRESSURE | 圧板ユニット |
| | CH1-1112-000 | E | 1 | BOARD, CONTACT | ダイヤル基板 |
| * | CH1-1277-000 | E | 1 | BACK PANEL FLEX | BPフレキ |
| | CH2-5111-000 | E | 1 | SWITCH, DATE | デートSW |
| | CH4-0338-000 | E | 1 | DATE CBA | DATEモジュール |
| | CS2-3233-000 | E | 1 | SHAFT, ROLLER HOLDER | ローラ軸 |
| | CS2-5594-000 | E | 1 | SPRING, COIL | クリックバネ |
| | CS2-6966-000 | E | 1 | SPRING, ROLLER | ローラバネ |
| | VR5-3560-473 | E | 1 | RESISTOR 47K OHM | RDATE |
| | X99-0427-000 | | 3 | SCREW, CROSS-RECESS, PH | |
| | X99-0470-000 | | 1 | NUT | DATE六角ナット |
| | X99-0582-000 | | 3 | SCREW, CROSS-RECESS, PH | |
| | X99-0583-000 | | 1 | SCREW, CROSS-RECESS, PH | |
| | X99-0685-000 | | 5 | SCREW, CROSS-RECESS, PH | |
| | XA1-7170-407 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XA4-3170-457 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XD1-1103-614 | | 1 | WASHER | ワッシャ |
| | XG8-1100-581 | | 1 | BALL | クリックボール |

REF. NO. C12-8204
C12-8205
C12-8206

# CANON EOS A2
# EOS A2E
# EOS 5


CB1-1923
CB1-2559
CA1-8648
N.S
CA1-6525
X99-0582
CB1-0193
N.S
CH1-1112
X99-0583
CS2-5594
XG8-1100-581
CB1-1924
CB1-1934
N.S
N.S
X99-0582x2
CH1-1277
X99-0427
N.S
CB1-1927
CB1-1926
XD1-1103-614
CB1-1933
N.S
CB1-1933x5
CS2-3233
CS2-6966
CB1-1928
CF1-2715
CB1-0183

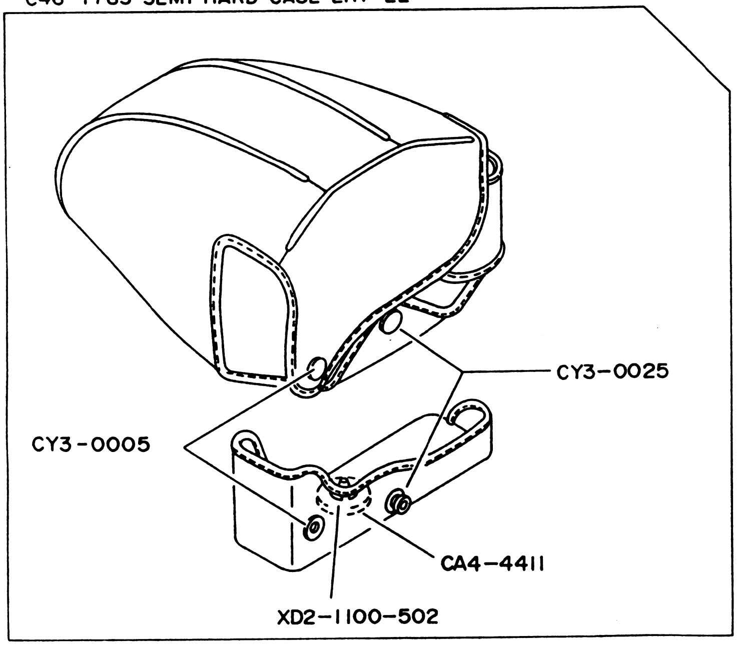
# PARTS LIST

REF. NO. C12-8204, 8205, 8206

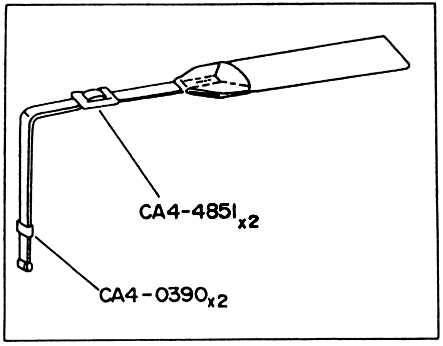
| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CA1-6525-000 | E | 1 | PLATE, SPRING | P押上げバネ |
| | CA1-8648-000 | D | 1 | SHIELD, LIGHT | Dモルト |
| | CB1-0183-000 | D | 1 | ROLLER-1, BACK COVER GUIDE | 背蓋ガイドローラー1 |
| | CB1-0193-000 | E | 1 | SPRING, CARTRIDGE | パトローネ押え |
| | CB1-1923-000 | D | 1 | DIAL, REAR INPUT | Sダイヤル |
| | CB1-1924-000 | E | 1 | CONTACT, DIAL | Sダイヤル接片 |
| | CB1-1926-000 | E | 1 | DETENT, DIAL | Sダイヤルクリック |
| | CB1-1927-000 | E | 1 | CONTACT, DIAL LOCK SWITCH | SダイヤルSW接片 |
| | CB1-1928-000 | E | 1 | HOLDER, ROLLER | 背蓋可動レバー |
| | CB1-1933-000 | | 6 | SCREW, CROSS-RECESS, PH | |
| | CB1-1934-000 | | 1 | SCREW, CROSS-RECESS, PH | |
| | CB1-2559-000 | D | 1 | CAM, REAR INPUT DIAL | SダイヤルSW |
| | CF1-2715-000 | D | 1 | PLATE, PRESSURE | 圧板ユニット |
| | CH1-1112-000 | E | 1 | BOARD, CONTACT | ダイヤル基板 |
| | CH1-1277-000 | E | 1 | BACK DANEL FLEX | B.Pフレキ |
| | CS2-3233-000 | E | 1 | SHAFT, ROLLER HOLDER | ローラ軸 |
| | CS2-5594-000 | E | 1 | SPRING, COIL | クリックバネ |
| | CS2-6966-000 | | 1 | SPRING, ROLLER | ローラバネ |
| | X99-0427-000 | | 1 | SCREW, CROSS-RECESS, PH | |
| | X99-0582-000 | | 3 | SCREW, CROSS-RECESS, PH | |
| | X99-0583-000 | | 1 | SCREW, CROSS-RECESS, PH | |
| | XD1-1103-614 | | 1 | WASHER | ワッシャ |
| | XG8-1100-581 | | 1 | BALL | クリックボール |

# CANON EOS 5 QD, A2, A2E, 5 (ACC)

C46-1782 SEMI HARD CASE EH7-L
C46-1783 SEMI HARD CASE EH7-LL


CY3-0025
CY3-0005
CA4-4411
XD2-1100-502

C56-1591 WIDE STRAP EW-500MA


CA4-4851 x2
CA4-0390 x2

# PARTS LIST

REF. NO. C12-8201, 8204, 8205, 8206 (ACC)

| NEW | PARTS NO. | CLASS | QTY | DESCRIPTION | |
|---|---|---|---|---|---|
| | CA4-0390-000 | D | 2 | LOOP | 環 |
| | CA4-4411-000 | D | 1 | SCREW, TIGHTENING | 締付けビズ |
| | CA4-4851-000 | E | 2 | CLASP | 止メ金 |
| * | CY3-0005-000 | D | 1 | HOOK | ホック |
| * | CY3-0025-000 | D | 1 | HOOK | ホック |
| | XD2-1100-502 | | 1 | RETAINING RING (E-TYPE) | Eリング |

# ELECTRIC PART LIST

## REF. NO. C12-8201, 8204, 8205, 8206

| PARTS NO. | DESCRIPTION | REMARKS |
|---|---|---|
| Y11-3702-000 | LEAD | BLACK |
| Y11-3704-000 | LEAD | PINK |
| Y11-3713-000 | LEAD | RED |
| Y11-3901-000 | LEAD | WHITE |
| Y11-3902-000 | LEAD | BLACK |
| Y11-3903-000 | LEAD | RED |
| Y11-3904-000 | LEAD | PINK |
| Y11-3907-000 | LEAD | YELLOW |
| Y11-3909-000 | LEAD | GREEN |
| Y11-3911-000 | LEAD | BLUE |
| Y11-3912-000 | LEAD | PURPLE |
| Y11-4402-000 | LEAD | BLACK |
| Y11-4403-000 | LEAD | RED |
| Y11-4411-000 | LEAD | BLUE |
| Y11-5001-000 | LEAD | WHITE |
| Y11-5002-000 | LEAD | BLACK |
| Y11-5003-000 | LEAD | RED |
| Y11-5006-000 | LEAD | ORENGE |
| Y11-5011-000 | LEAD | BLUE |
| Y11-5014-000 | LEAD | GRAY |

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| | CA1-6504-000 | 3 |
| | CA1-6525-000 | 13, 14 |
| | CA1-7777-000 | 7 |
| | CA1-7780-000 | 6 |
| | CA1-8648-000 | 13, 14 |
| | CA1-8798-000 | 13 |
| | CA1-8799-000 | 13 |
| | CA1-9328-000 | 3 |
| | CA1-9427-000 | 1 |
| | CA4-0390-000 | 15 |
| | CA4-1847-000 | 1 |
| | CA4-4411-000 | 15 |
| | CA4-4851-000 | 15 |
| | CB1-0183-000 | 13, 14 |
| | CB1-0193-000 | 13, 14 |
| | CB1-0238-000 | 7 |
| | CB1-0272-000 | 1 |
| | CB1-0273-000 | 1 |
| | CB1-0274-000 | 7 |
| * | CB1-0275-000 | 5 |
| | CB1-0276-000 | 1 |
| | CB1-0278-000 | 6 |
| | CB1-0282-000 | 1 |
| | CB1-1140-000 | 9 |
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| | CB1-1927-000 | 13, 14 |
| | CB1-1928-000 | 13, 14 |
| | CB1-1929-000 | 13 |
| | CB1-1930-000 | 13 |
| | CB1-1931-000 | 13 |
| | CB1-1933-000 | 13, 14 |
| | CB1-1934-000 | 13, 14 |
| | CB1-2011-000 | 2 |
| * | CB1-2541-000 | 10 |
| * | CB1-2542-000 | 10 |
| * | CB1-2543-000 | 10 |
| * | CB1-2544-000 | 10 |
| * | CB1-2545-000 | 1 |
| * | CB1-2548-000 | 4 |
| * | CB1-2553-000 | 1 |
| * | CB1-2559-000 | 13, 14 |
| * | CB1-2577-000 | 4 |
| * | CB1-2580-000 | 1 |
| * | CB1-2581-000 | 1 |
| * | CB1-2582-000 | 1 |
| * | CB1-2589-000 | 11 |
| * | CB1-2590-000 | 8 |
| * | CB1-2592-000 | 3 |
| * | CB1-2593-000 | 3 |
| * | CB1-2595-000 | 3 |
| * | CB1-2600-000 | 3 |
| * | CB1-2610-000 | 2 |
| | CB1-2636-000 | 7 |
| * | CB1-2639-000 | 6 |
| * | CB1-2640-000 | 4 |
| | CB1-2659-000 | 7 |
| * | CB1-2681-000 | 9 |
| * | CB1-2685-000 | 10 |
| * | CB1-2688-000 | 11 |
| * | CB1-2689-000 | 10 |
| * | CB1-2696-000 | 10 |
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| * | CY1-1560-000 | 11 |
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| * | CY2-5056-000 | 12 |
| * | CY2-5057-000 | 12 |
| * | CY2-5058-000 | 12 |
| * | CY2-5059-000 | 12 |
| * | CY2-5060-000 | 12 |
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| | XA4-6200-809 | 5 | | | |
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| | XA4-9140-509 | 1 | | | |
| | XA4-9170-309 | 6 | | | |
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| | XA4-9170-459 | 1, 6 | | | |
| | XA4-9170-559 | 4 | | | |
| | XA4-9170-607 | 1 | | | |
| | XA4-9170-609 | 1 | | | |
| | XA4-9170-807 | 9 | | | |
| | XA4-9200-509 | 9 | | | |
| | XA4-9200-559 | 4 | | | |
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| | XD1-1102-121 | 7 | | | |
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# PART 5. ELECTRICAL DIAGRAMS

# SCHEMATIC DIAGRAM

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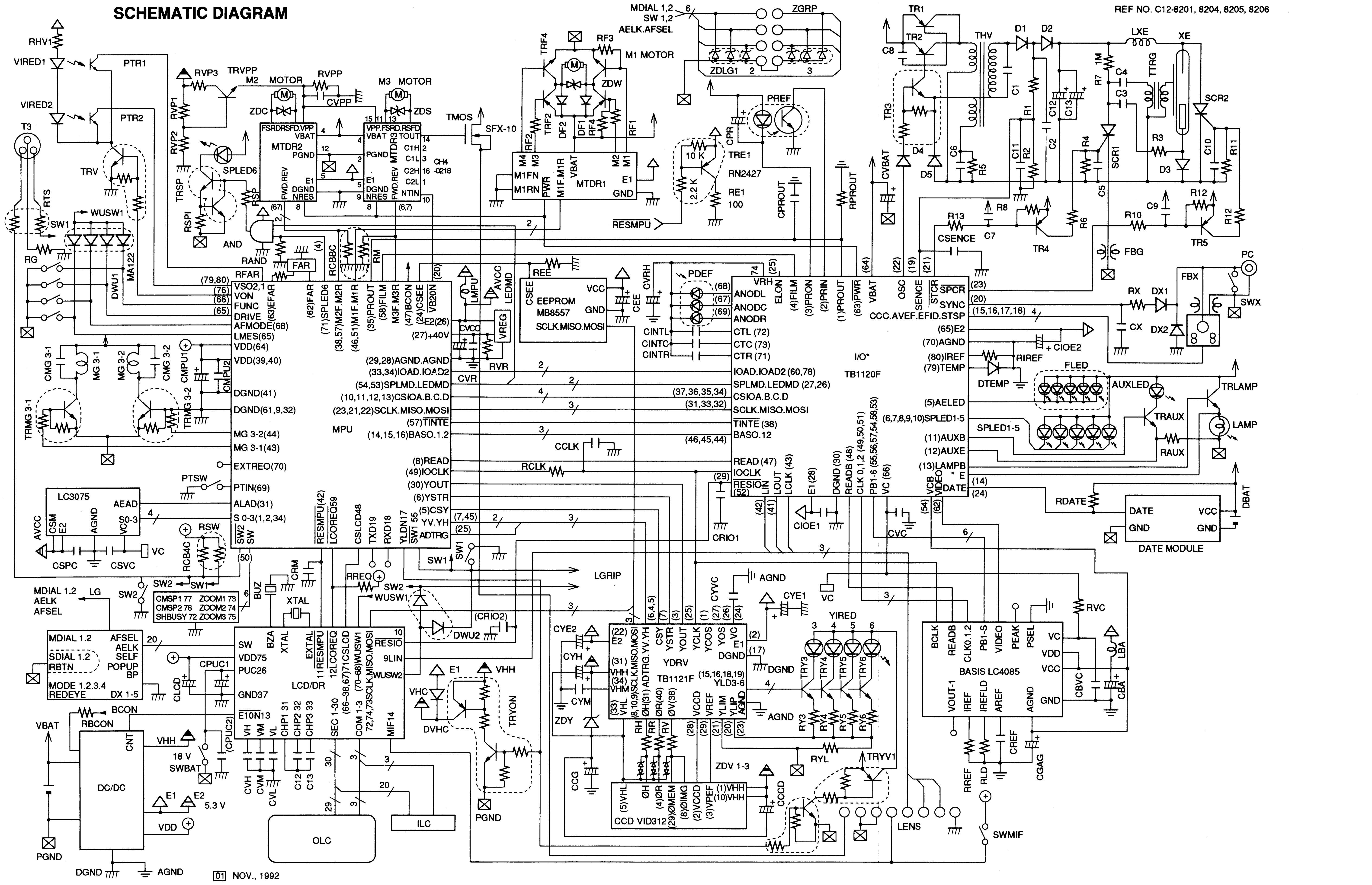

RHV1
VIRED1
PTR1
VIRED2
PTR2
T3
TRV
RTS
SW1
WUSW1
RG
DWU1
MA122
RVP3
TRVPP
M2 MOTOR
RVPP
CVPP
RVP1
RVP2
ZDC
MTDR2
SPLED6
TRSP
RSPI
RSP
AND
RAND
FAR
RFAR
RCBBC
RM
M3 MOTOR
ZDS
MTDR3
CH4 -0218
TMOS
SFX-10
TRF4
RF3
M1 MOTOR
ZDW
TRF2
DF2
DF1
RF4
RF1
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M1RN
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SW 1,2
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ZGRP
ZDLG1
PREF
CPR
TRE1
RN2427
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10 K
2.2 K
CPROUT
RPROUT
CVBAT
TR1
TR2
TR3
C8
THV
D1
D2
LXE
XE
C1
R1
C12
C13
C2
C11
R2
R7 1M
C4
C3
TTRG
SCR2
R3
D3
C10
R11
R4
SCR1
C5
D4
D5
C6
R5
R13
R8
C7
CSENCE
TR4
R6
R10
C9
R12
TR5
FBG
FBX
PC
SWX
RX
DX1
CX
DX2
REE
EEPROM MB8557
SCLK.MISO.MOSI
CVRH
CEE
CSEE
PDEF
CINTL
CINTC
CINTR
I/O*
TB1120F
CIOE2
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DTEMP
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AUXLED
TRLAMP
LAMP
TRAUX
RAUX
SPLED1-5
RDATE
DBAT
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MG 3-1
MG 3-2
CMG 3-2
CMPU1
CMPU2
TRMG 3-1
TRMG 3-2
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LMPU
AVCC
LEDMD
CVCC
VREG
RVR
CVR
CCLK
RCLK
PTSW
LC3075
AEAD
CSPC
CSVC
VC
RSW
RCB4C
SW2
BUZ
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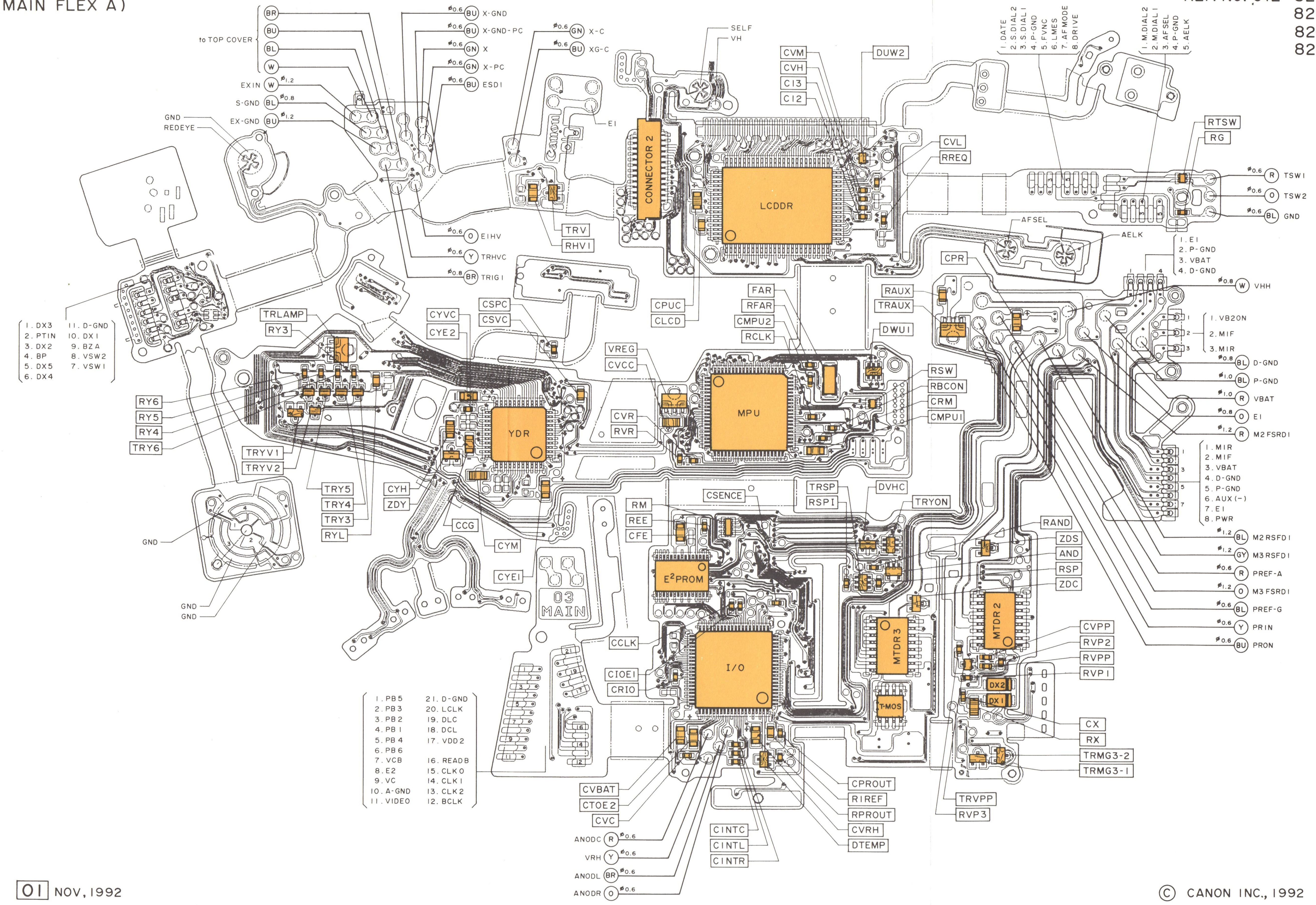
CLCD
LCD/DR
CPUC2
BCON
RBCON
VBAT
DC/DC
VHH
18 V
SWBAT
E1
E2
5.3 V
VDD
PGND
DGND
AGND
CVH
CVM
CVL
C12
C13
OLC
ILC
E1
VHH
VHC
DVHC
TRYON
CYE2
CYH
CYM
ZDY
CCG
CYVC
CYE1
YDRV
TB1121F
CCD VID312
ZDV 1-3
CCCD
YIRED
TRY3
TRY4
TRY5
TRY6
RY3
RY4
RY5
RY6
RYL
TRYV1
LENS
SWMIF
RVC
BASIS LC4085
LBA
CBVC
CBA
RREF
RLD
CREF
CGAG

01 NOV., 1992

# P.C.B. DIAGRAM
(MAIN FLEX A)

REF. NO. C12-8201
8204
8205
8206



to TOP COVER
BR
BU
BL
W
EXIN W ϕ1.2
S-GND BL ϕ0.8
EX-GND BU ϕ1.2
GND
REDEYE
ϕ0.6 BU X-GND
ϕ0.6 BU X-GND-PC
ϕ0.6 GN X
ϕ0.6 GN X-PC
ϕ0.6 BU ESDI
ϕ0.6 GN X-C
ϕ0.6 BU XG-C
SELF
VH
EI
ϕ0.6 O EIHV
ϕ0.6 Y TRHVC
ϕ0.8 BR TRIGI
TRV
RHVI
CONNECTOR 2
CVM
CVH
CI3
CI2
DUW2
LCDDR
CVL
RREQ
1. DATE
2. S.DIAL 2
3. S.DIAL I
4. P-GND
5. FVNC
6. LMES
7. AF MODE
8. DRIVE
1. M.DIAL 2
2. M.DIAL I
3. AFSEL
4. P-GND
5. AELK
RTSW
RG
ϕ0.6 R TSW I
ϕ0.6 O TSW 2
ϕ0.6 BL GND
AFSEL
AELK
1. EI
2. P-GND
3. VBAT
4. D-GND
ϕ0.8 W VHH
1. VB2ON
2. MIF
3. MIR
ϕ0.8 BL D-GND
ϕ1.0 BL P-GND
ϕ1.0 R VBAT
ϕ0.8 O EI
ϕ1.2 R M2 FSRDI
1. MIR
2. MIF
3. VBAT
4. D-GND
5. P-GND
6. AUX (−)
7. EI
8. PWR
ϕ1.2 BL M2RSFDI
ϕ1.2 GY M3RSFDI
ϕ0.6 R PREF-A
ϕ1.2 O M3 FSRDI
ϕ0.6 BL PREF-G
ϕ0.6 Y PRIN
ϕ0.6 BU PRON
CPR
RAUX
TRAUX
CPUC
CLCD
FAR
RFAR
CMPU2
RCLK
DWUI
RSW
RBCON
CRM
CMPUI
MPU
VREG
VCVC
CVR
RVR
CSPC
CSVC
CYVC
CYE2
YDR
TRLAMP
RY3
1. DX3
2. PTIN
3. DX2
4. BP
5. DX5
6. DX4
11. D-GND
10. DXI
9. BZA
8. VSW2
7. VSWI
RY6
RY5
RY4
TRY6
TRYVI
TRYV2
TRY5
TRY4
TRY3
RYL
CYH
ZDY
CCG
CYM
CYEI
GND
GND
GND
03 MAIN
CSENCE
RM
REE
CFE
E²PROM
TRSP
RSPI
DVHC
TRYON
RAND
ZDS
AND
RSP
ZDC
MTDR 2
MTDR 3
T-MOS
DX2
DXI
CVPP
RVP2
RVPP
RVPI
CX
RX
TRMG3-2
TRMG3-I
TRVPP
RVP3
CCLK
CIOEI
CRIO
I/O
1. PB5
2. PB3
3. PB2
4. PB I
5. PB 4
6. PB 6
7. VCB
8. E2
9. VC
10. A-GND
11. VIDEO
21. D-GND
20. LCLK
19. DLC
18. DCL
17. VDD 2
16. READB
15. CLK 0
14. CLK I
13. CLK 2
12. BCLK
CVBAT
CTOE 2
CVC
ANODC R ϕ0.6
VRH Y ϕ0.6
ANODL BR ϕ0.6
ANODR O ϕ0.6
CINTC
CINTL
CINTR
CPROUT
RIREF
RPROUT
CVRH
DTEMP

01 NOV, 1992

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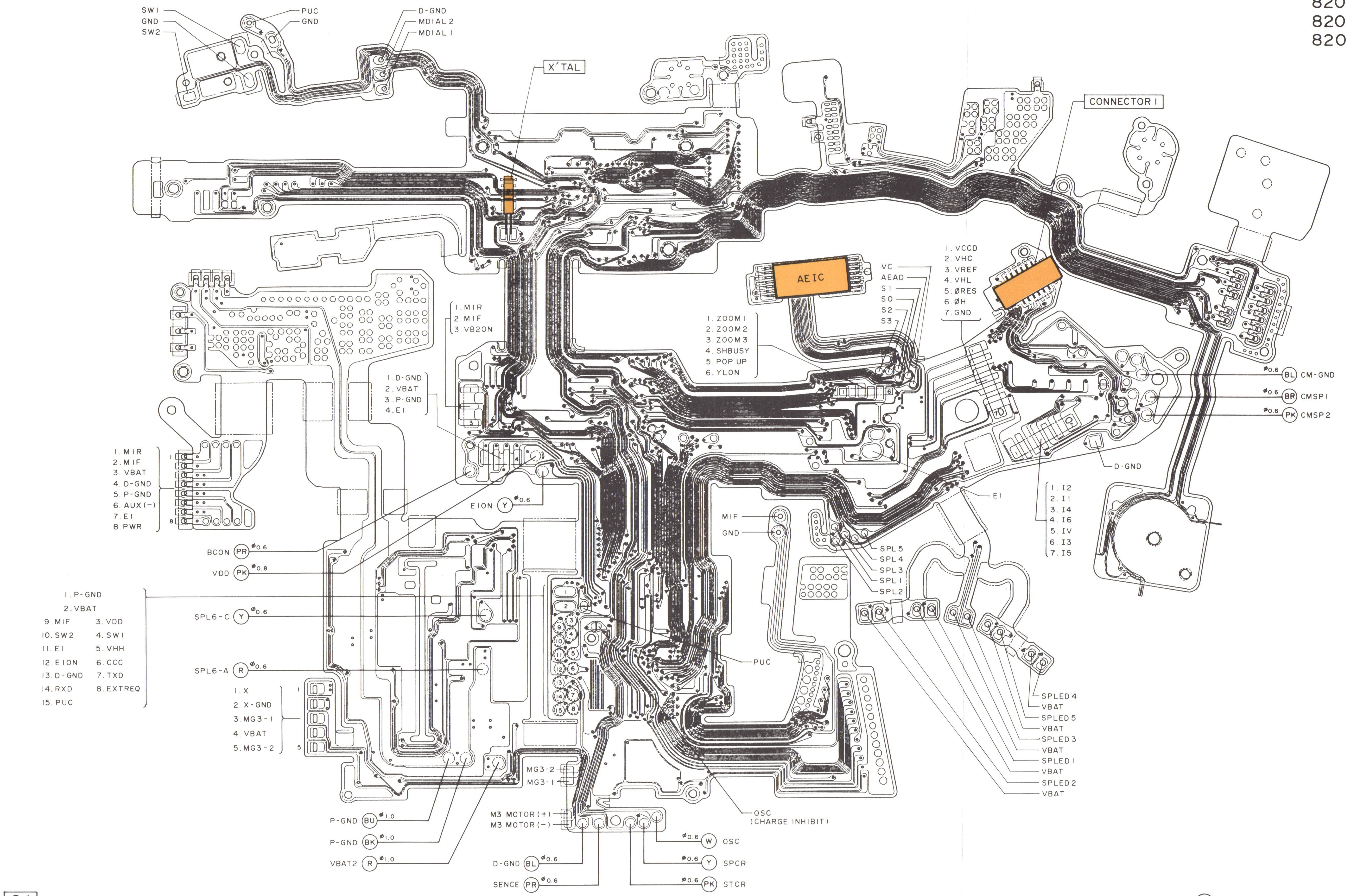
# P.C.B. DIAGRAM
# (MAIN FLEX B)

REF. NO. C21-8201
8204
8205
8206


SW1
GND
SW2
PUC
GND
D-GND
MDIAL 2
MDIAL 1
X'TAL
CONNECTOR 1
AEIC
VC
AEAD
S1
S0
S2
S3
1. VCCD
2. VHC
3. VREF
4. VHL
5. ØRES
6. ØH
7. GND
1. ZOOM1
2. ZOOM2
3. ZOOM3
4. SHBUSY
5. POP UP
6. YLON
1. MIR
2. MIF
3. VB2ON
1. D-GND
2. VBAT
3. P-GND
4. E1
1. MIR
2. MIF
3. VBAT
4. D-GND
5. P-GND
6. AUX(−)
7. E1
8. PWR
1
8
E1ON
Y
ø0.6
BCON
PR
ø0.6
VDD
PK
ø0.8
1. P-GND
2. VBAT
9. MIF
10. SW2
11. E1
12. E1ON
13. D-GND
14. RXD
15. PUC
3. VDD
4. SW1
5. VHH
6. CCC
7. TXD
8. EXTREQ
SPL6-C
Y
ø0.6
SPL6-A
R
ø0.6
1. X
2. X-GND
3. MG3-1
4. VBAT
5. MG3-2
1
5
MIF
GND
PUC
SPL5
SPL4
SPL3
SPL1
SPL2
E1
BL
CM-GND
BR
CMSP1
PK
CMSP2
D-GND
1. I2
2. I1
3. I4
4. I6
5. IV
6. I3
7. I5
SPLED4
VBAT
SPLED5
VBAT
SPLED3
VBAT
SPLED1
VBAT
SPLED2
VBAT
MG3-2
MG3-1
M3 MOTOR (+)
M3 MOTOR (−)
OSC
(CHARGE INHIBIT)
P-GND
BU
ø1.0
P-GND
BK
ø1.0
VBAT2
R
ø1.0
D-GND
BL
ø0.6
SENCE
PR
ø0.6
W
OSC
Y
SPCR
PK
STCR
ø0.6

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# P. C. B. DIAGRAM

REF. NO. C12-8201
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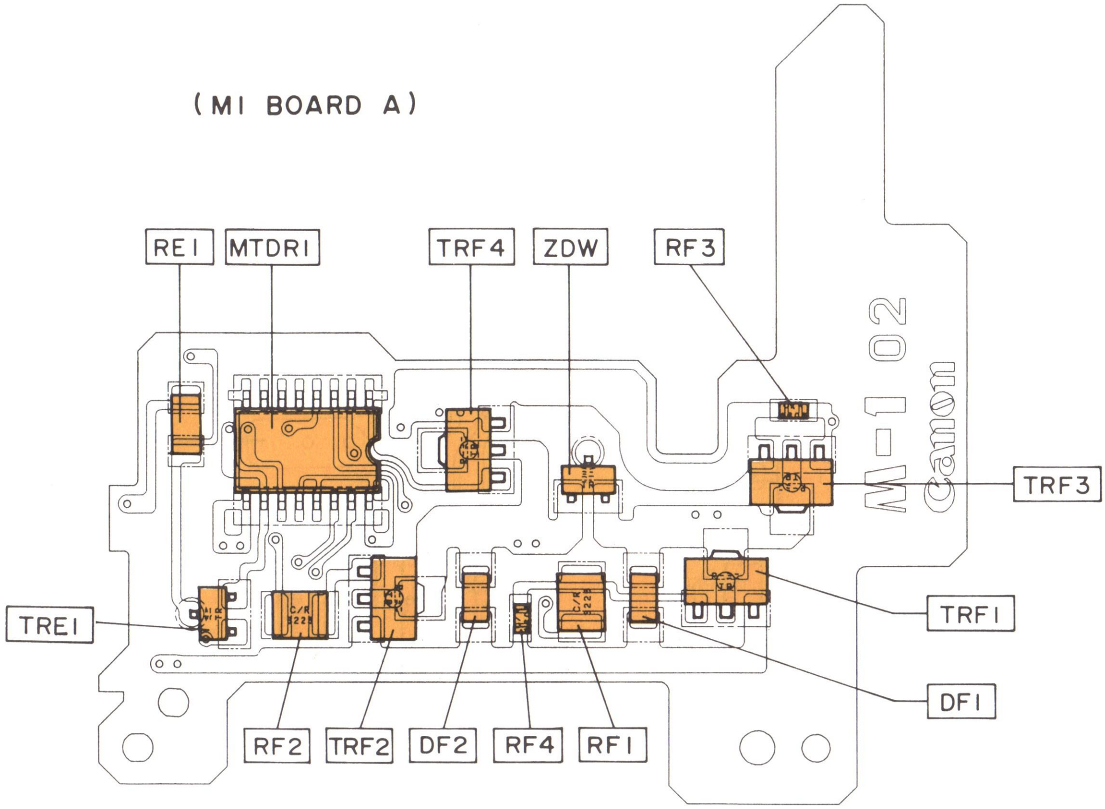
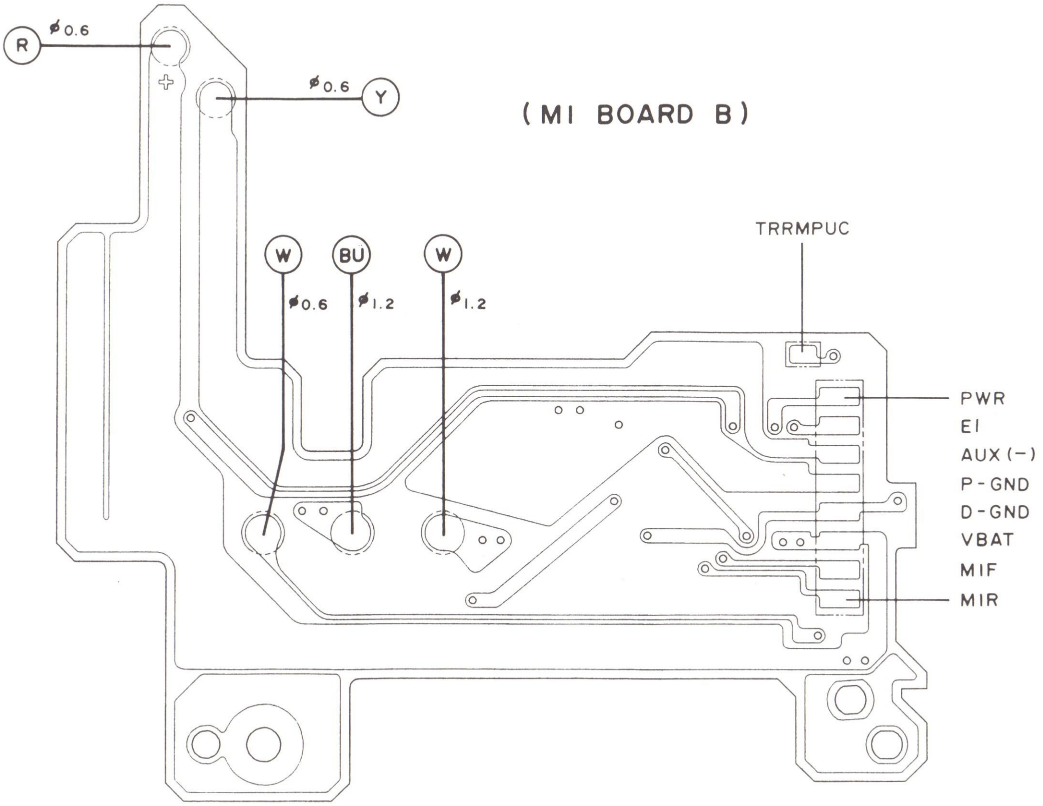
8206

(MI BOARD A)


RE1
MTDR1
TRF4
ZDW
RF3
M-102
Canon
TRF3
TRE1
TRF1
DF1
RF2
TRF2
DF2
RF4
RF1

(MI BOARD B)


R
φ0.6
Y
φ0.6
W
BU
W
φ0.6
φ1.2
φ1.2
TRRMPUC
PWR
E1
AUX (−)
P-GND
D-GND
VBAT
MIF
MIR

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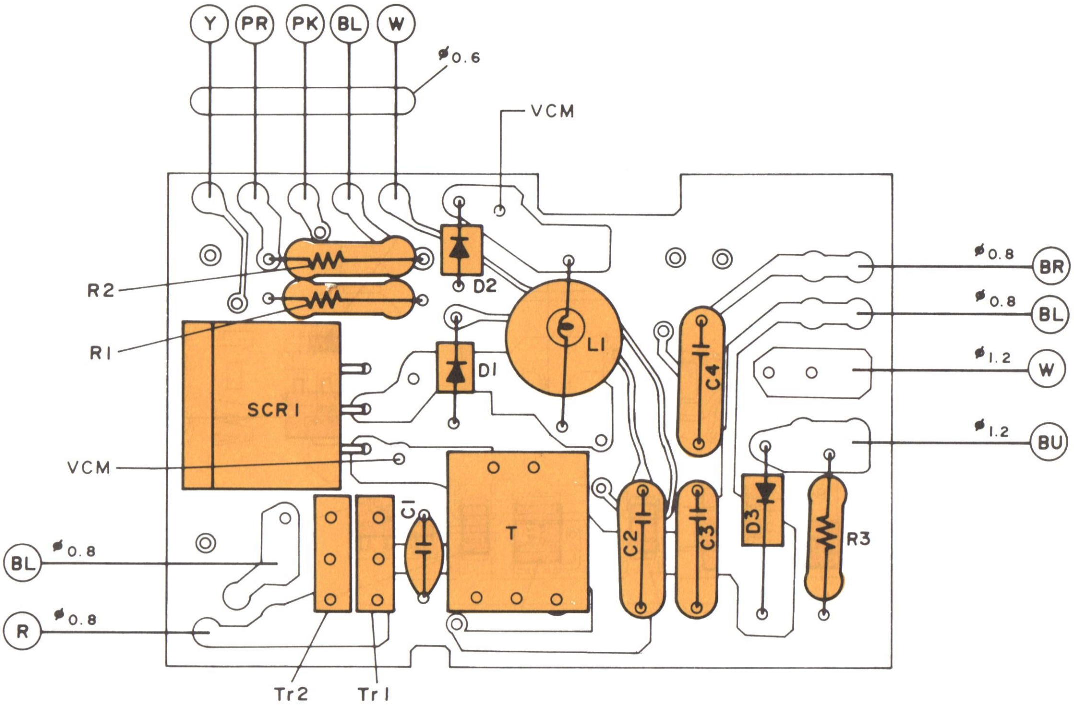
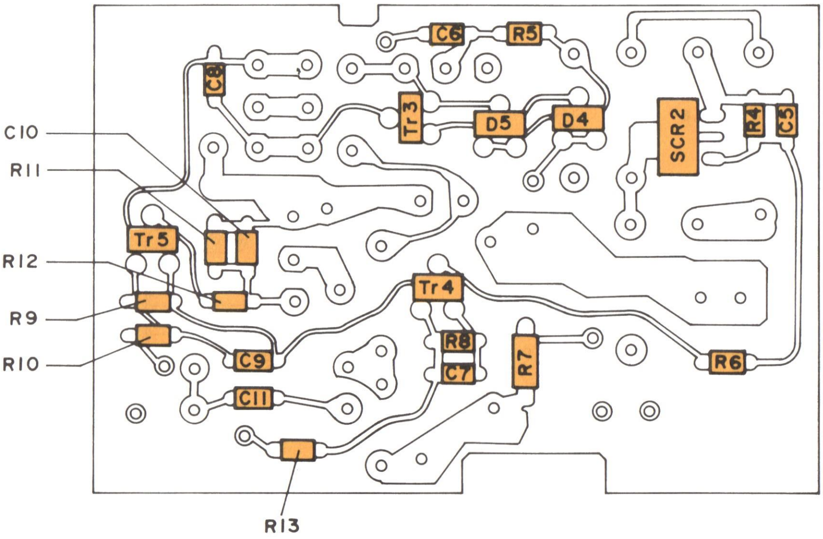
# P.C.B. DIAGRAM

REF. NO. C12-8201
8204
8205
8206

## (FLASH BOARD A)


Y
PR
PK
BL
W
ø0.6
VCM
R2
R1
D2
L1
SCR1
D1
C4
VCM
ø0.8
BR
ø0.8
BL
ø1.2
W
ø1.2
BU
C1
T
C2
C3
D3
R3
ø0.8
BL
ø0.8
R
Tr2
Tr1

## (FLASH BOARD B)


C6
R5
C8
Tr3
D5
D4
SCR2
R4
C5
C10
R11
Tr5
R12
R9
R10
C9
C11
Tr4
R8
C7
R7
R6
R13

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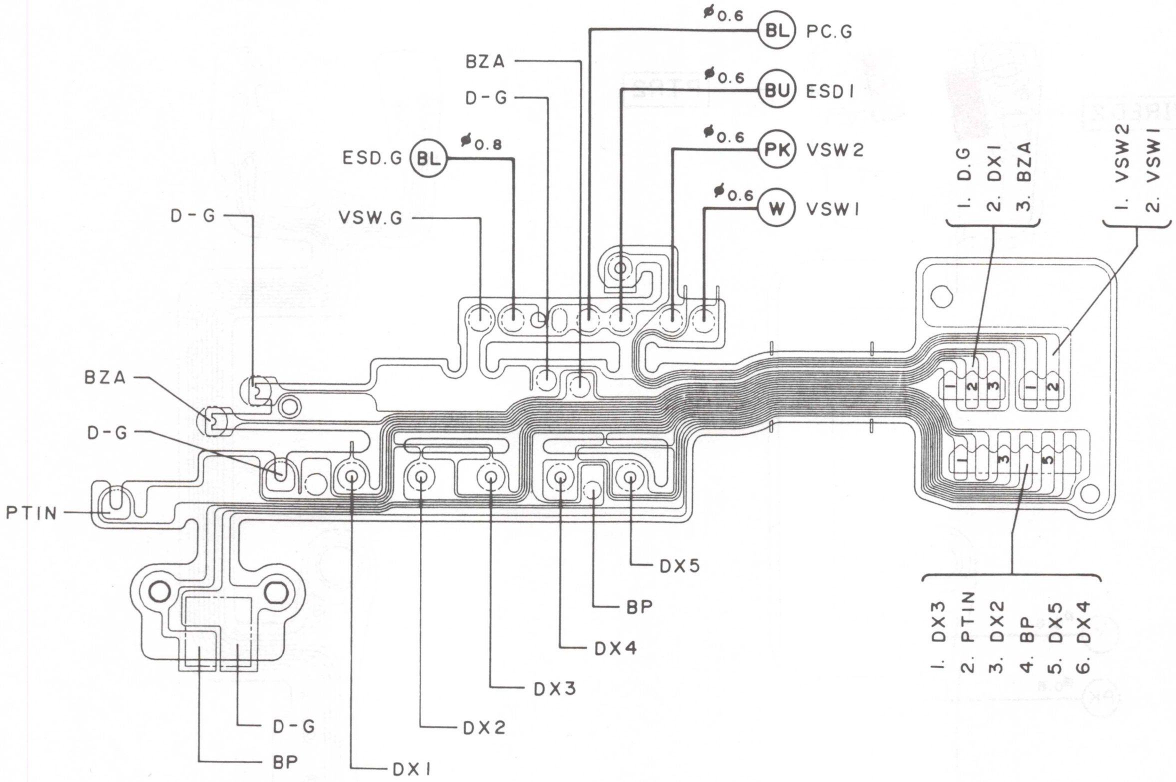
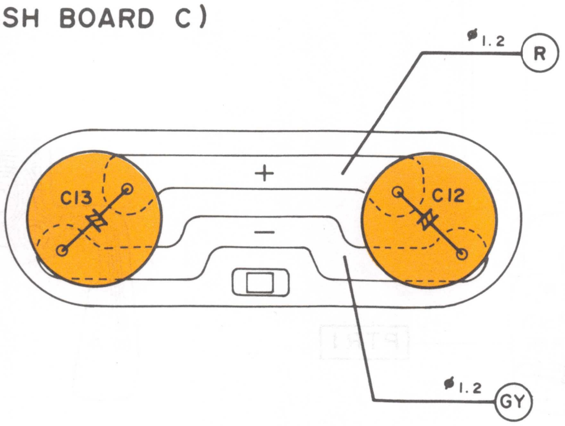
( DX FLEX )


ϕ0.6 BL PC.G
BZA
ϕ0.6 BU ESD1
D-G
ϕ0.6 PK VSW2
ESD.G BL ϕ0.8
ϕ0.6 W VSW1
1. D.G
2. DX1
3. BZA
1. VSW2
2. VSW1
D-G
VSW.G
BZA
D-G
PTIN
DX5
BP
DX4
DX3
D-G
DX2
BP
DX1
1. DX3
2. PTIN
3. DX2
4. BP
5. DX5
6. DX4

( FLASH BOARD C )


ϕ1.2 R
C13
C12
+
−
ϕ1.2 GY

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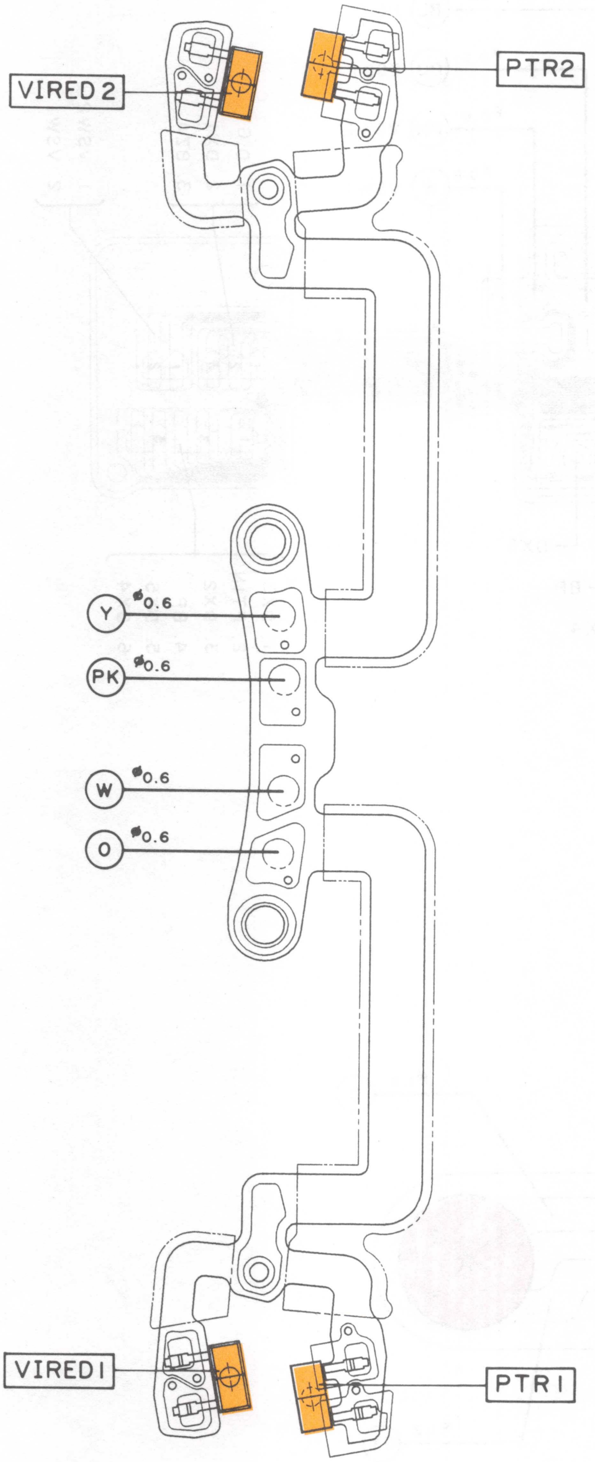
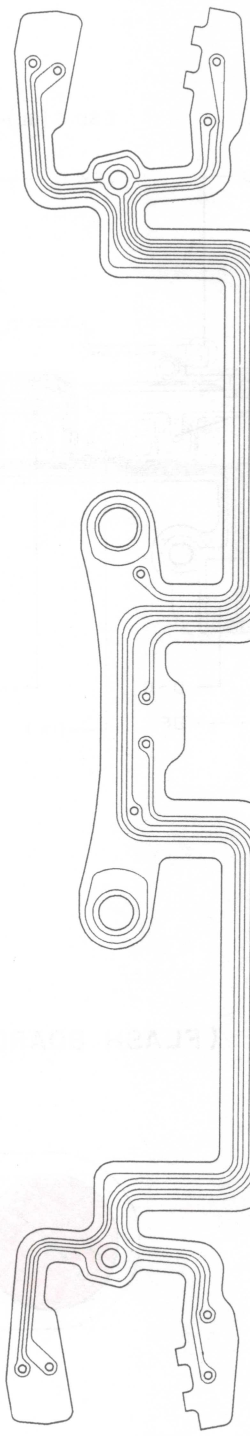
# P. C. B. DIAGRAM

REF. NO. C12-8201
8204
8205
8206

(HV FLEX A)


VIRED 2
PTR2
Y
ø0.6
PK
ø0.6
W
ø0.6
O
ø0.6
VIRED1
PTR1

(HV FLEX B)



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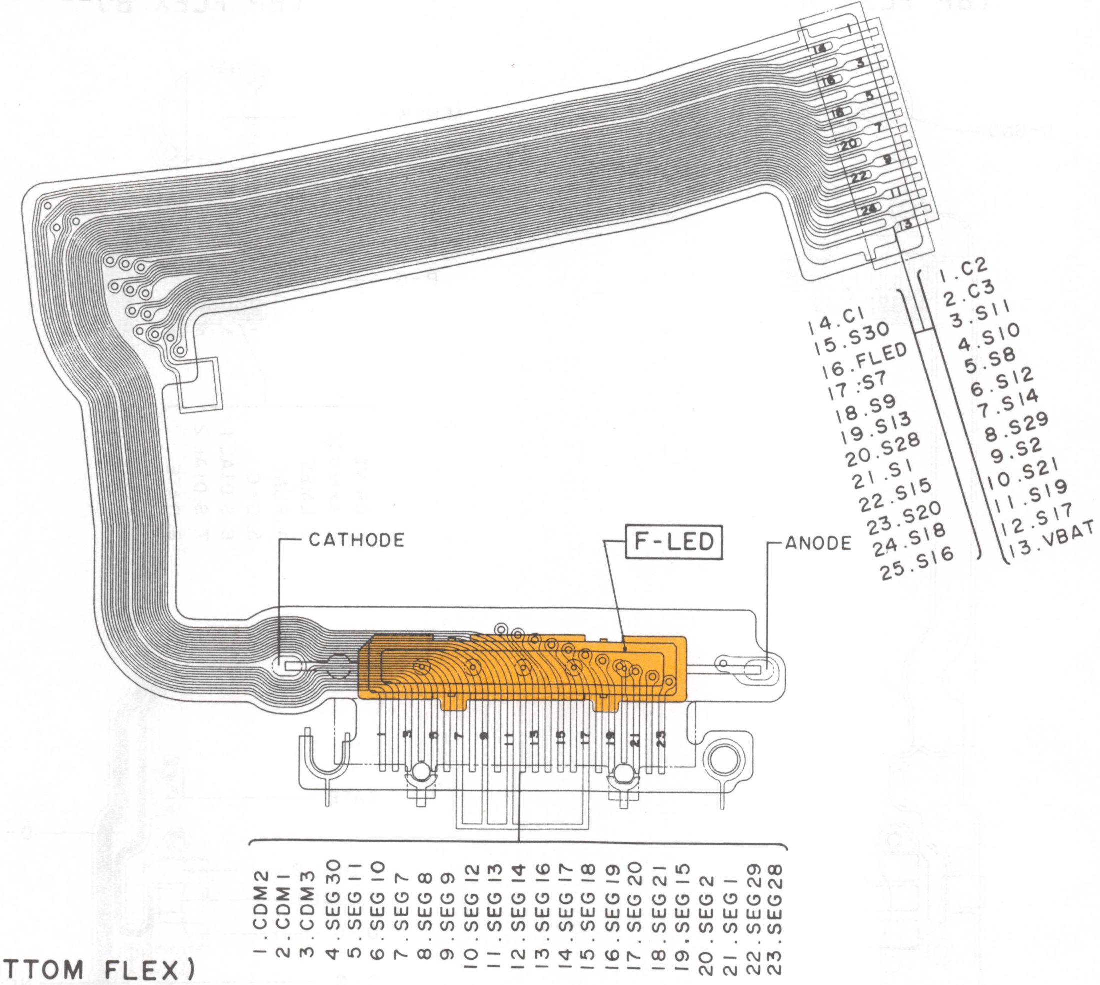
# P.C.B. DIAGRAM

REF. NO. C12-8201
8204
8205
8206

(ILC FLEX)


1
3
5
7
9
11
13
14
16
18
20
22
24
1.C2
2.C3
3.S11
4.S10
5.S8
6.S12
7.S14
8.S29
9.S2
10.S21
11.S19
12.S17
13.VBAT
14.C1
15.S30
16.FLED
17.S7
18.S9
19.S13
20.S28
21.S1
22.S15
23.S20
24.S18
25.S16
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F-LED
ANODE
1
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5
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9
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13
15
17
19
21
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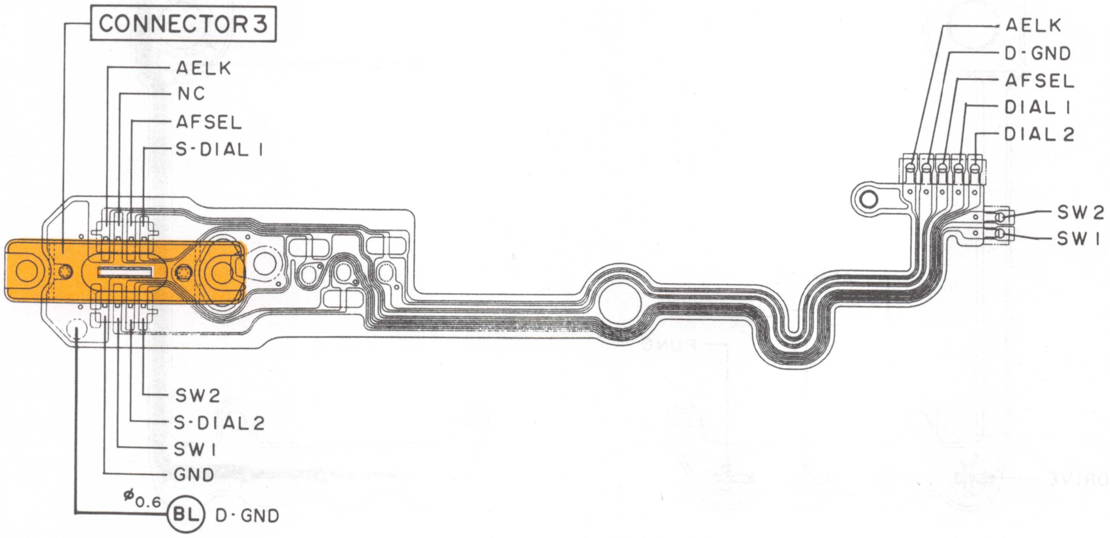
1.CDM2
2.CDM1
3.CDM3
4.SEG30
5.SEG11
6.SEG10
7.SEG7
8.SEG8
9.SEG9
10.SEG12
11.SEG13
12.SEG14
13.SEG16
14.SEG17
15.SEG18
16.SEG19
17.SEG20
18.SEG21
19.SEG15
20.SEG2
21.SEG1
22.SEG29
23.SEG28

(BOTTOM FLEX)


CONNECTOR 3
AELK
NC
AFSEL
S-DIAL 1
SW2
S-DIAL2
SW1
GND
ø0.6
BL
D-GND
AELK
D-GND
AFSEL
DIAL 1
DIAL 2
SW2
SW1

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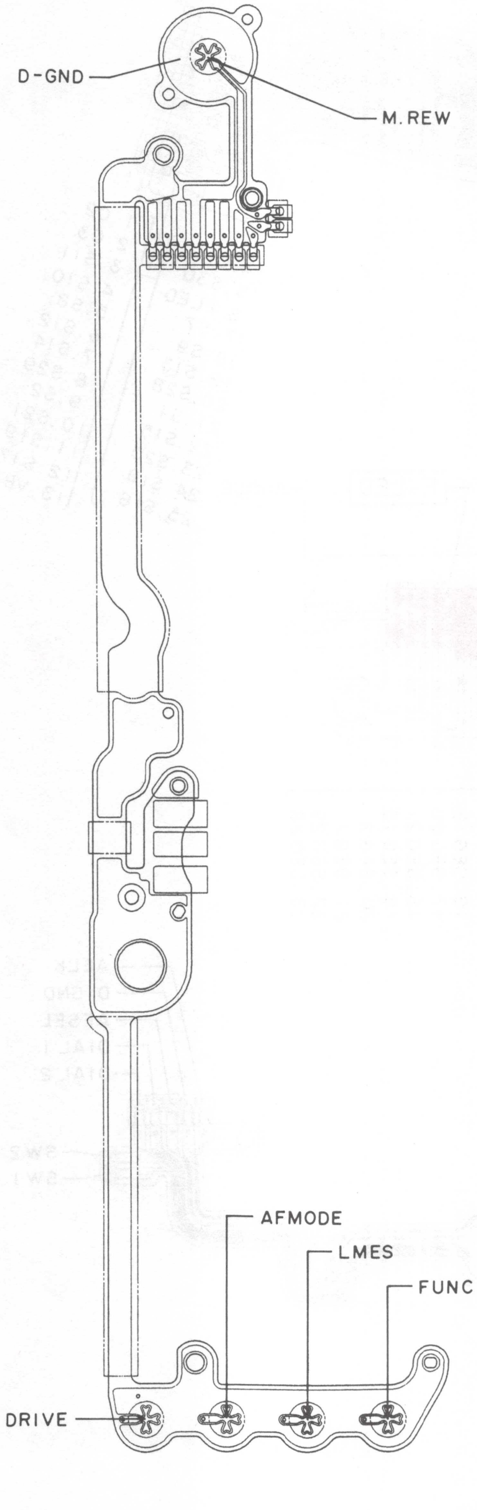
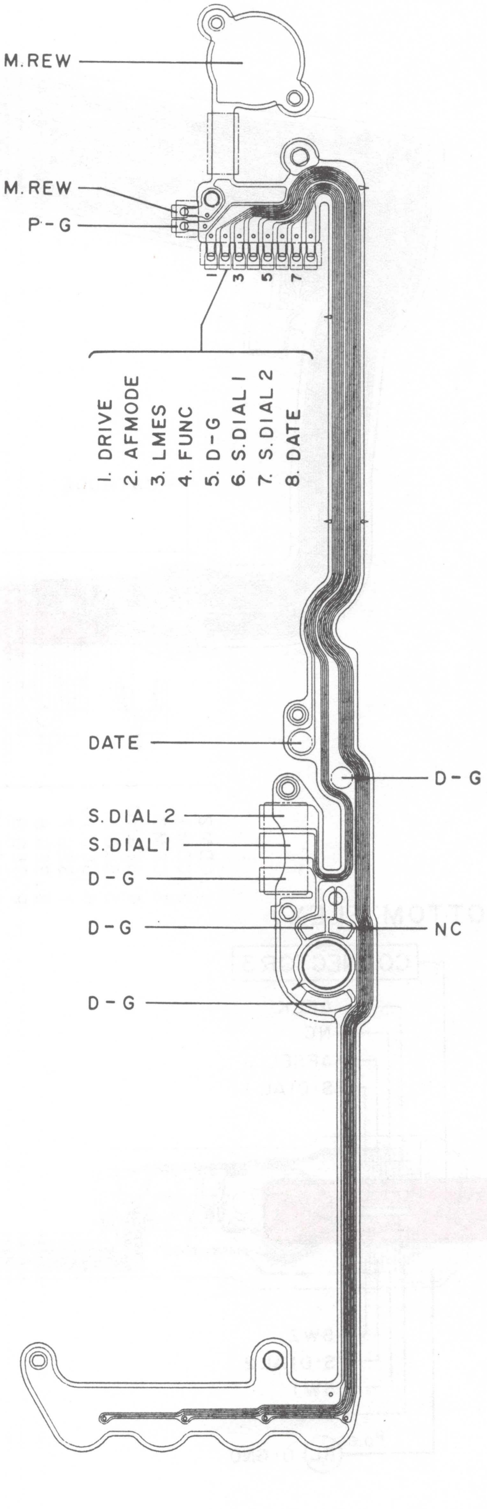
# P.C.B. DIAGRAM

REF. NO. C12-8201
8204
8205
8206

(BP FLEX A)


D-GND
M.REW
AFMODE
LMES
FUNC
DRIVE

(BP FLEX B)


M.REW
M.REW
P-G
1
3
5
7
1. DRIVE
2. AFMODE
3. LMES
4. FUNC
5. D-G
6. S.DIAL 1
7. S.DIAL 2
8. DATE
DATE
D-G
S.DIAL 2
S.DIAL 1
D-G
D-G
NC
D-G

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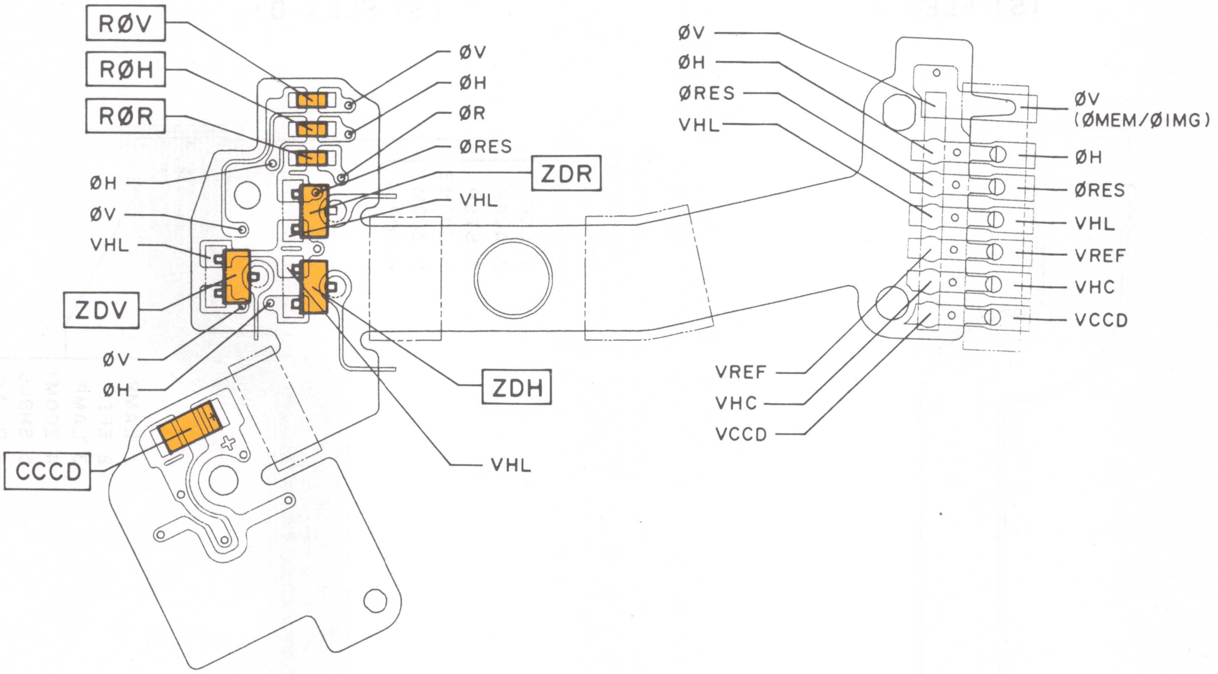
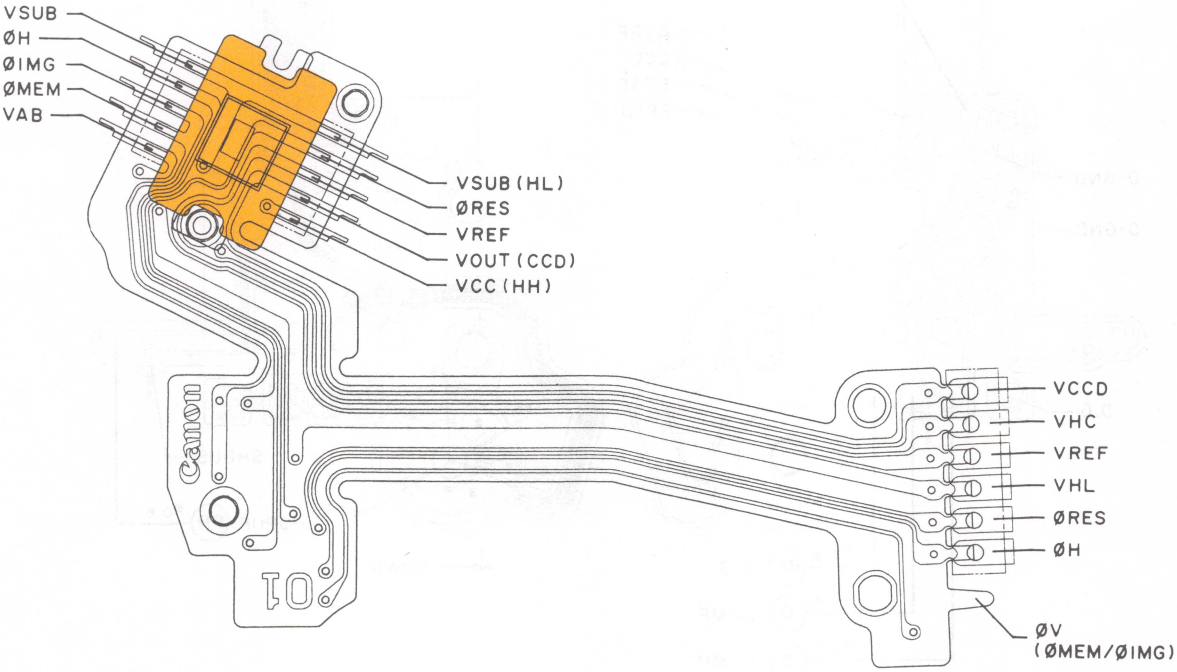
# P.C.B. DIAGRAM

REF. NO. C12-8201
8204
8205
8206

## (CCD FLEX A)


RØV
RØH
RØR
ØV
ØH
ØR
ØRES
ZDR
VHL
ØH
ØV
VHL
ZDV
ØV
ØH
ZDH
VHL
CCCD
ØV
ØH
ØRES
VHL
ØV
(ØMEM/ØIMG)
ØH
ØRES
VHL
VREF
VHC
VCCD
VREF
VHC
VCCD

## (CCD FLEX B)


VSUB
ØH
ØIMG
ØMEM
VAB
VSUB (HL)
ØRES
VREF
VOUT (CCD)
VCC (HH)
Canon
01
VCCD
VHC
VREF
VHL
ØRES
ØH
ØV
(ØMEM/ØIMG)

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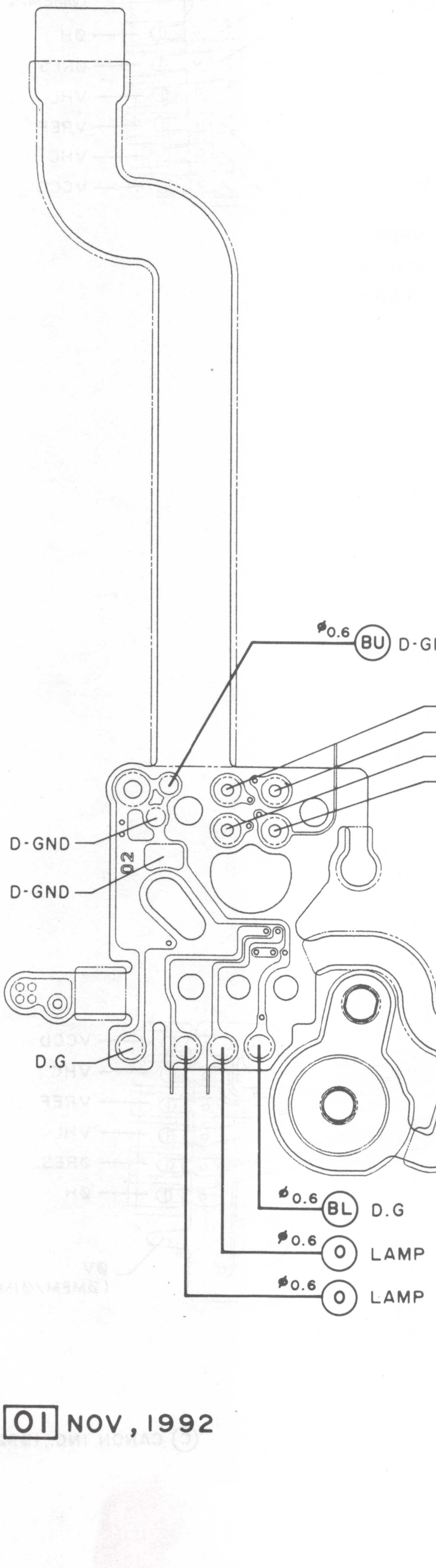
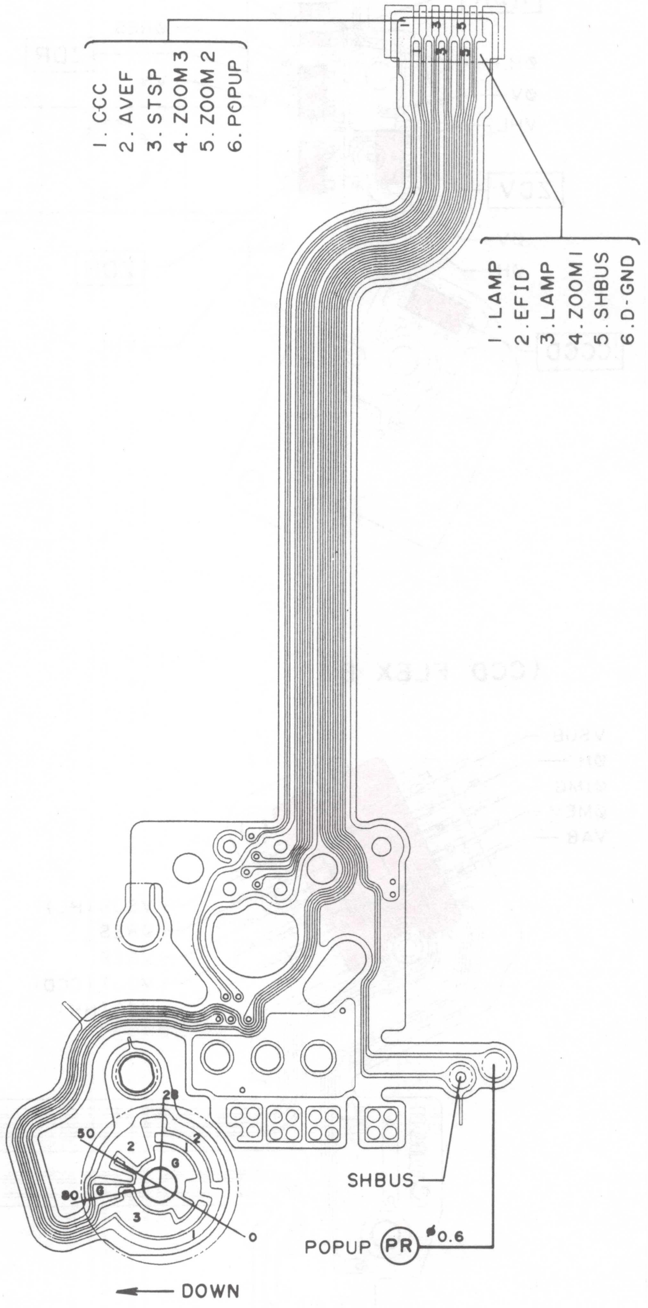
# P.C.B. DIAGRAM

REF. NO. C12-8201
8204
8205
8206

(ST FLEX A)


ø0.6 BU D-GND
AVEF
CCC
STSP
EFID
D-GND
02
D-GND
D.G
ø0.6 BL D.G
ø0.6 O LAMP
ø0.6 O LAMP

(ST FLEX B)


1. CCC
2. AVEF
3. STSP
4. ZOOM3
5. ZOOM2
6. POPUP
1
3
5
1. LAMP
2. EFID
3. LAMP
4. ZOOM1
5. SHBUS
6. D-GND
28
2
50
2
G
80
G
3
1
0
DOWN
SHBUS
POPUP PR ø0.6

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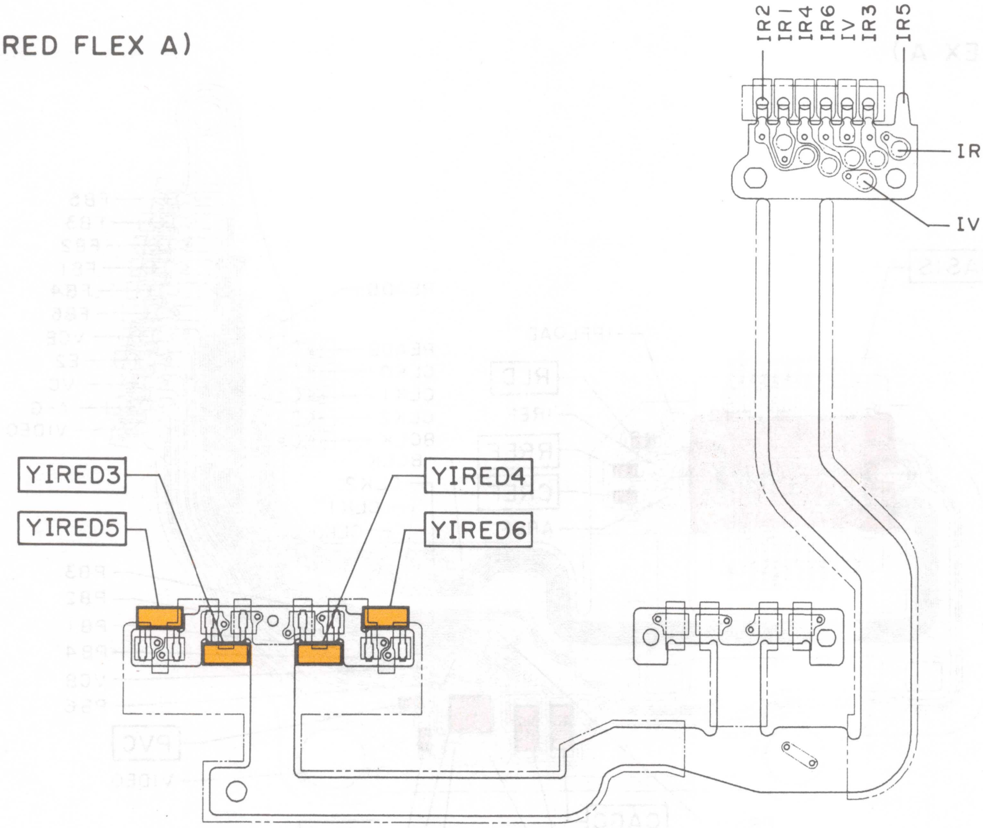
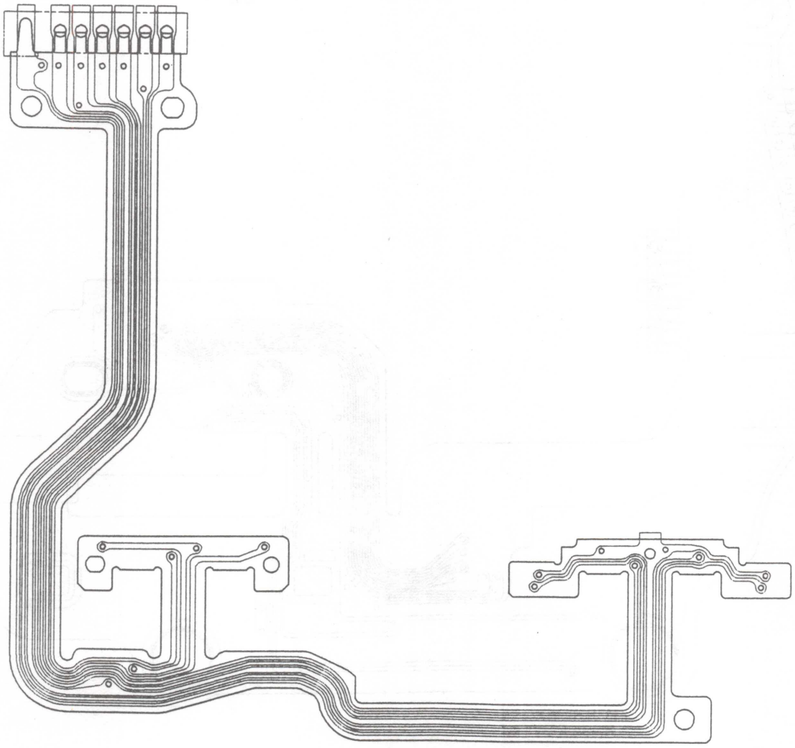
# P.C.B. DIAGRAM

REF. NO. C12-8201
8204
8205
8206

(IRED FLEX A)


IR2
IR1
IR4
IR6
IV
IR3
IR5
IR5
IV
YIRED3
YIRED5
YIRED4
YIRED6

(IRED FLEX B)



01 NOV, 1992

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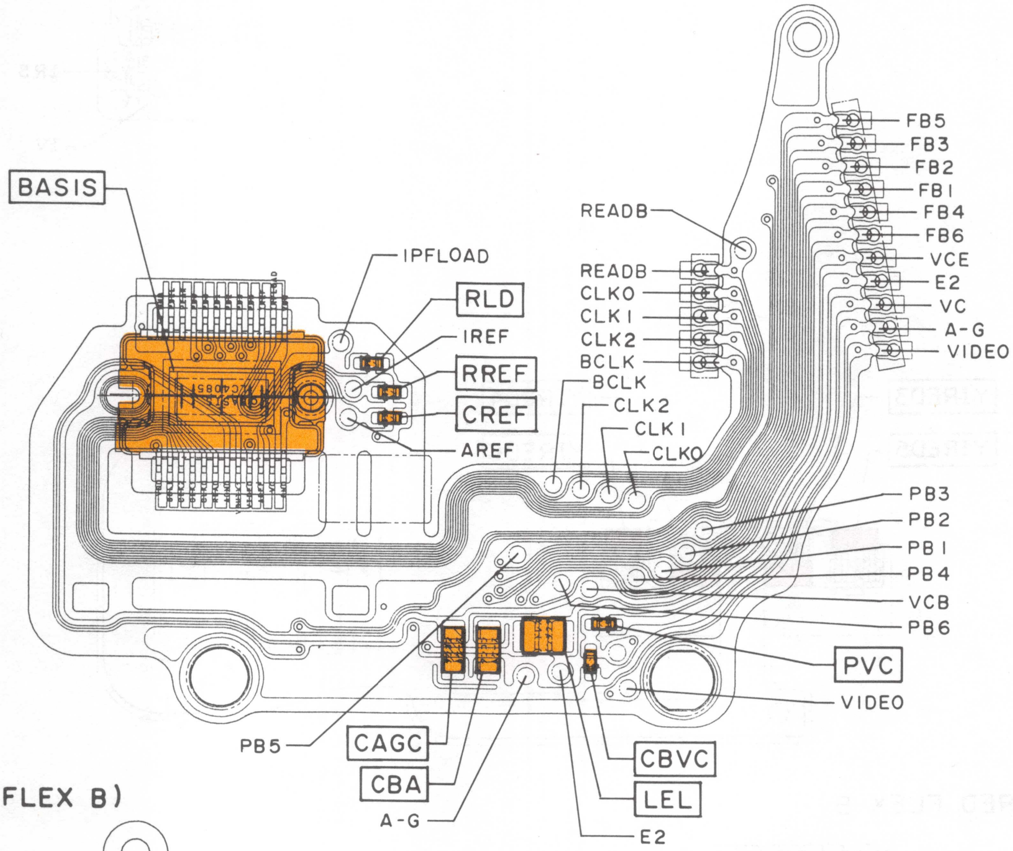
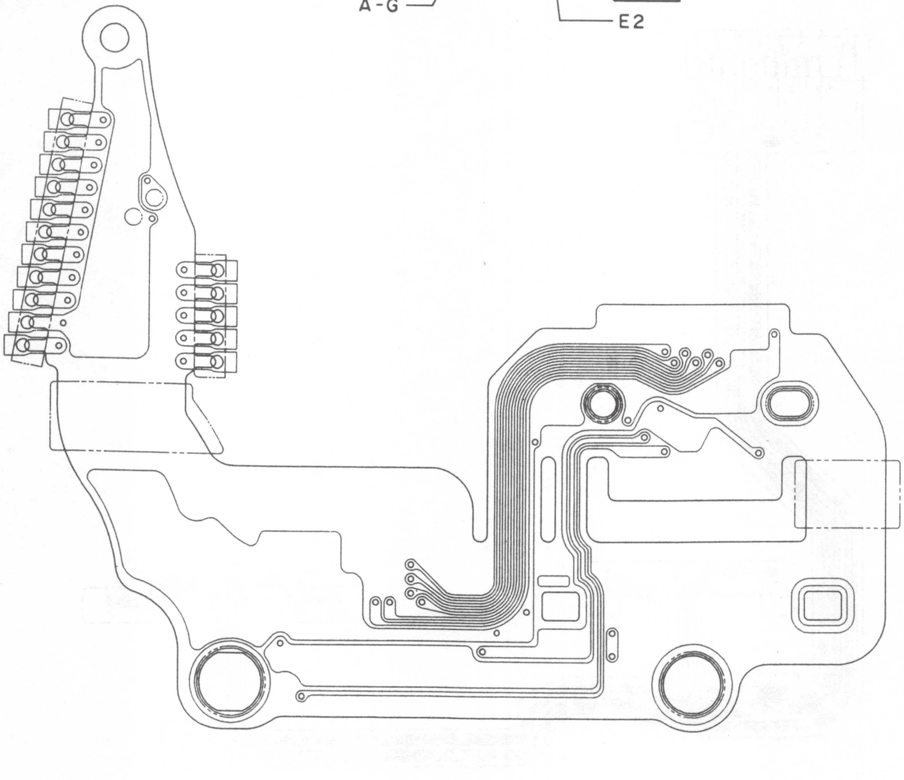
# P.C.B. DIAGRAM

REF. NO. C12-8201
8204
8205
8206

(BA FLEX A)


BASIS
IPFLOAD
RLD
IREF
RREF
CREF
AREF
READB
READB
CLK0
CLK1
CLK2
BCLK
BCLK
CLK2
CLK1
CLK0
FB5
FB3
FB2
FB1
FB4
FB6
VCE
E2
VC
A-G
VIDEO
PB3
PB2
PB1
PB4
VCB
PB6
PVC
VIDEO
PB5
CAGC
CBA
A-G
CBVC
LEL
E2

(BA FLEX B)



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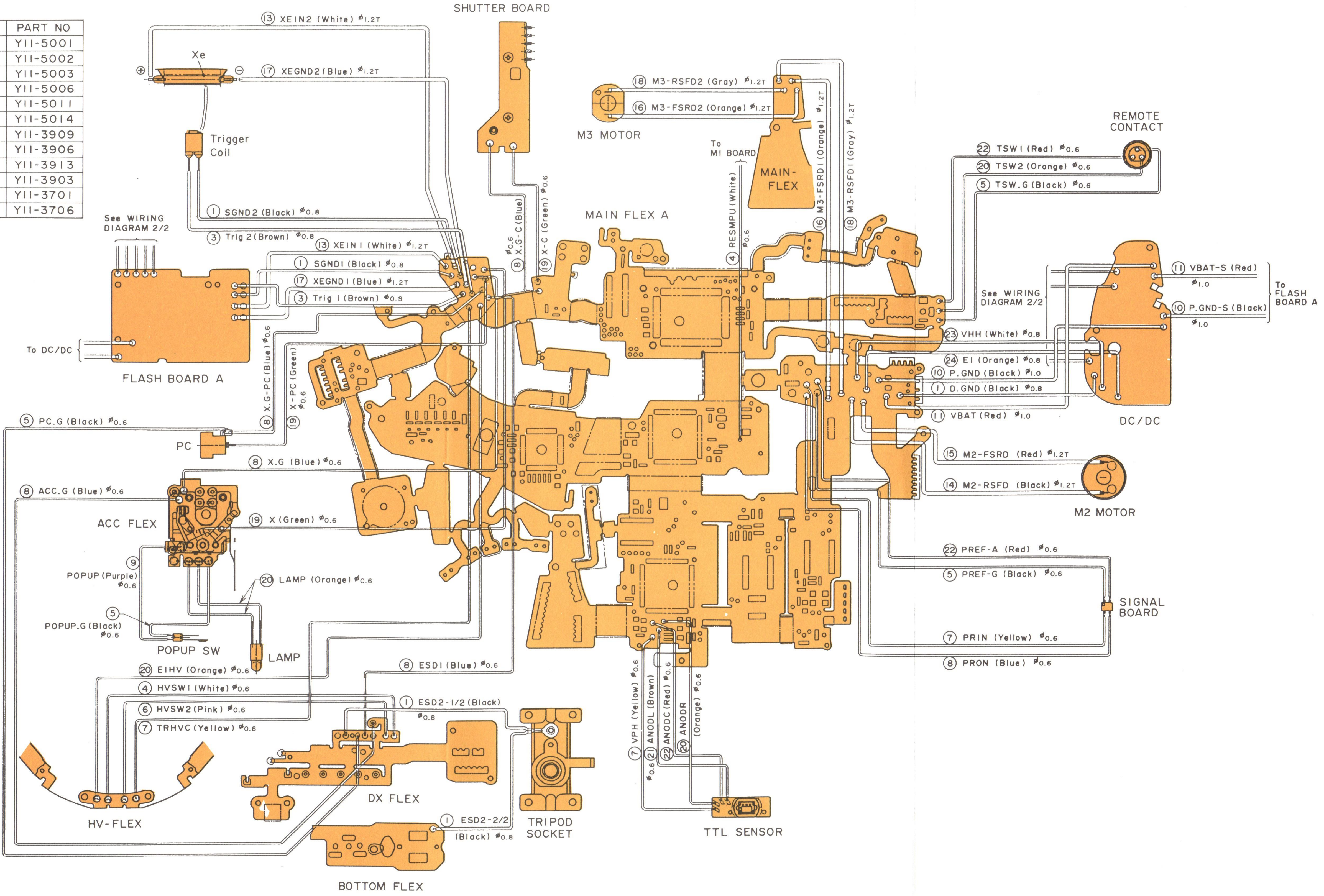
# WIRING DIAGRAM 1/2

REF. NO. C12-8201
8204
8205
8206

| NO | PART NO | NO | PART NO |
|---|---|---|---|
| ① | Y11-3702 | ⑬ | Y11-5001 |
| ② | Y11-3704 | ⑭ | Y11-5002 |
| ③ | Y11-3713 | ⑮ | Y11-5003 |
| ④ | Y11-3901 | ⑯ | Y11-5006 |
| ⑤ | Y11-3902 | ⑰ | Y11-5011 |
| ⑥ | Y11-3904 | ⑱ | Y11-5014 |
| ⑦ | Y11-3907 | ⑲ | Y11-3909 |
| ⑧ | Y11-3911 | ⑳ | Y11-3906 |
| ⑨ | Y11-3912 | ㉑ | Y11-3913 |
| ⑩ | Y11-4402 | ㉒ | Y11-3903 |
| ⑪ | Y11-4403 | ㉓ | Y11-3701 |
| ⑫ | Y11-4411 | ㉔ | Y11-3706 |


SHUTTER BOARD
⑬ XEIN2 (White) ϕ1.2T
Xe
⊕
⊖
⑰ XEGND2 (Blue) ϕ1.2T
Trigger Coil
① SGND2 (Black) ϕ0.8
③ Trig 2 (Brown) ϕ0.8
⑬ XEIN1 (White) ϕ1.2T
① SGND1 (Black) ϕ0.8
⑰ XEGND1 (Blue) ϕ1.2T
③ Trig 1 (Brown) ϕ0.9
See WIRING DIAGRAM 2/2
To DC/DC
FLASH BOARD A
⑧ X.G-PC (Blue) ϕ0.6
⑲ X-PC (Green) ϕ0.6
⑧ X.G-C (Blue) ϕ0.6
⑲ X-C (Green) ϕ0.6
⑤ PC.G (Black) ϕ0.6
PC
⑧ X.G (Blue) ϕ0.6
⑧ ACC.G (Blue) ϕ0.6
ACC FLEX
⑲ X (Green) ϕ0.6
⑨ POPUP (Purple) ϕ0.6
⑳ LAMP (Orange) ϕ0.6
⑤ POPUP.G (Black) ϕ0.6
POPUP SW
LAMP
⑳ EIHV (Orange) ϕ0.6
④ HVSW1 (White) ϕ0.6
⑥ HVSW2 (Pink) ϕ0.6
⑦ TRHVC (Yellow) ϕ0.6
⑧ ESD1 (Blue) ϕ0.6
① ESD2-1/2 (Black) ϕ0.8
HV-FLEX
DX FLEX
① ESD2-2/2 (Black) ϕ0.8
BOTTOM FLEX
TRIPOD SOCKET
M3 MOTOR
⑱ M3-RSFD2 (Gray) ϕ1.2T
⑯ M3-FSRD2 (Orange) ϕ1.2T
To M1 BOARD
MAIN-FLEX
④ RESMPU (White) ϕ0.6
⑯ M3-FSRD1 (Orange) ϕ1.2T
⑱ M3-RSFD1 (Gray) ϕ1.2T
MAIN FLEX A
REMOTE CONTACT
㉒ TSW1 (Red) ϕ0.6
⑳ TSW2 (Orange) ϕ0.6
⑤ TSW.G (Black) ϕ0.6
⑪ VBAT-S (Red) ϕ1.0
⑩ P.GND-S (Black) ϕ1.0
To FLASH BOARD A
See WIRING DIAGRAM 2/2
㉓ VHH (White) ϕ0.8
㉔ EI (Orange) ϕ0.8
⑩ P.GND (Black) ϕ1.0
① D.GND (Black) ϕ0.8
⑪ VBAT (Red) ϕ1.0
DC/DC
⑮ M2-FSRD (Red) ϕ1.2T
⑭ M2-RSFD (Black) ϕ1.2T
M2 MOTOR
㉒ PREF-A (Red) ϕ0.6
⑤ PREF-G (Black) ϕ0.6
SIGNAL BOARD
⑦ PRIN (Yellow) ϕ0.6
⑧ PRON (Blue) ϕ0.6
⑦ VPH (Yellow) ϕ0.6
② ANODL (Brown) ϕ0.6
㉒ ANODC (Red) ϕ0.6
⑳ ANODR (Orange) ϕ0.6
TTL SENSOR

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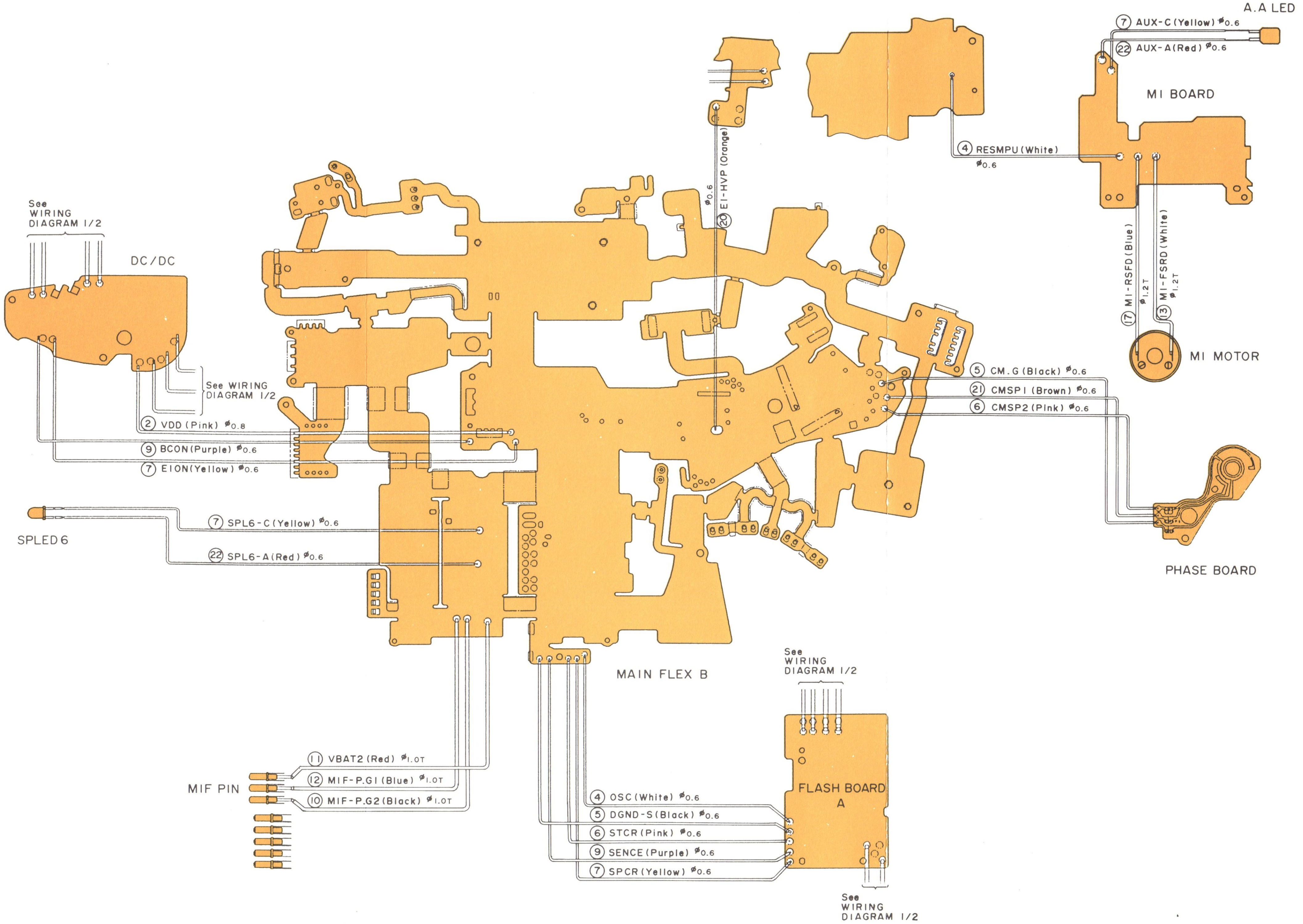
# WIRING DIAGRAM 2/2

REF. NO. C12-8201
8204
8205
8206

| NO | PART NO | NO | PART NO |
|---|---|---|---|
| ① | Y11-3702 | ⑬ | Y11-5001 |
| ② | Y11-3704 | ⑭ | Y11-5002 |
| ③ | Y11-3713 | ⑮ | Y11-5003 |
| ④ | Y11-3901 | ⑯ | Y11-5006 |
| ⑤ | Y11-3902 | ⑰ | Y11-5011 |
| ⑥ | Y11-3904 | ⑱ | Y11-5014 |
| ⑦ | Y11-3907 | ⑲ | Y11-3909 |
| ⑧ | Y11-3911 | ⑳ | Y11-3906 |
| ⑨ | Y11-3912 | ㉑ | Y11-3913 |
| ⑩ | Y11-4402 | ㉒ | Y11-3903 |
| ⑪ | Y11-4403 | ㉓ | Y11-3701 |
| ⑫ | Y11-4411 | ㉔ | Y11-3706 |


A.A LED
⑦ AUX-C (Yellow) ø0.6
㉒ AUX-A (Red) ø0.6
MI BOARD
④ RESMPU (White) ø0.6
⑳ EI-HVP (Orange) ø0.6
⑰ MI-RSFD (Blue) ø1.2T
⑬ MI-FSRD (White) ø1.2T
MI MOTOR
⑤ CM.G (Black) ø0.6
㉑ CMSP1 (Brown) ø0.6
⑥ CMSP2 (Pink) ø0.6
PHASE BOARD
See WIRING DIAGRAM 1/2
DC/DC
See WIRING DIAGRAM 1/2
② VDD (Pink) ø0.8
⑨ BCON (Purple) ø0.6
⑦ EION (Yellow) ø0.6
SPLED6
⑦ SPL6-C (Yellow) ø0.6
㉒ SPL6-A (Red) ø0.6
MAIN FLEX B
See WIRING DIAGRAM 1/2
FLASH BOARD A
MIF PIN
⑪ VBAT2 (Red) ø1.0T
⑫ MIF-P.G1 (Blue) ø1.0T
⑩ MIF-P.G2 (Black) ø1.0T
④ OSC (White) ø0.6
⑤ DGND-S (Black) ø0.6
⑥ STCR (Pink) ø0.6
⑨ SENCE (Purple) ø0.6
⑦ SPCR (Yellow) ø0.6
See WIRING DIAGRAM 1/2

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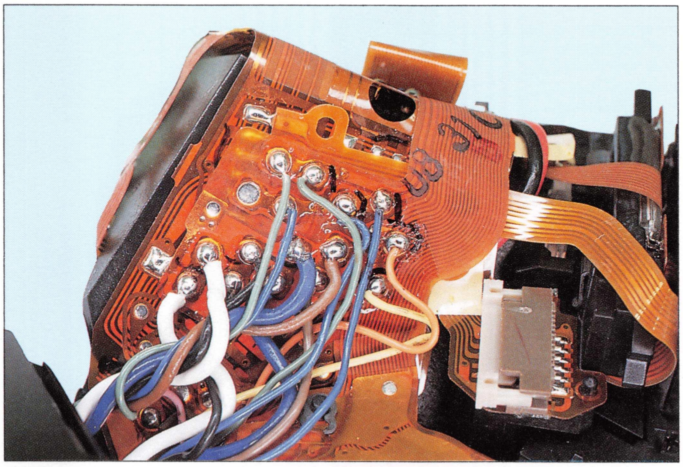
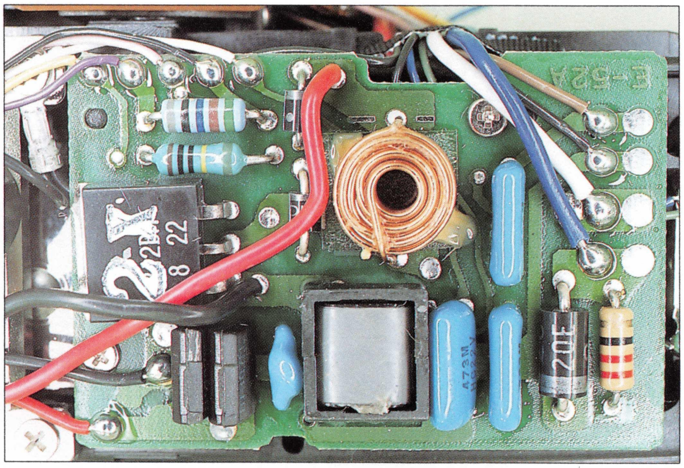
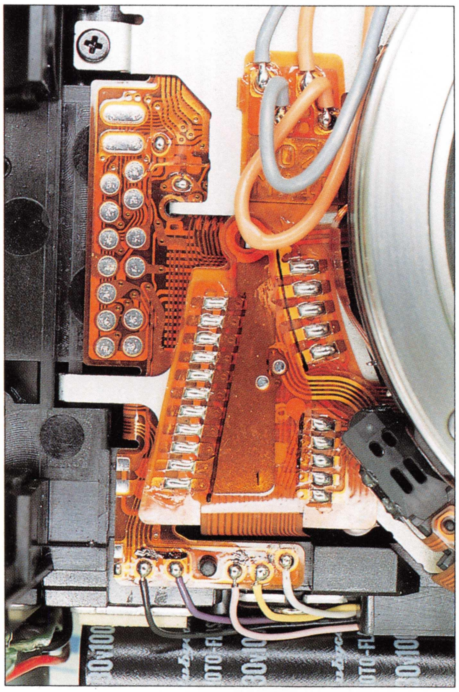
# WIRING LAYOUT

REF. No. C12 – 8201
C12 – 8204
C12 – 8205
C12 – 8206

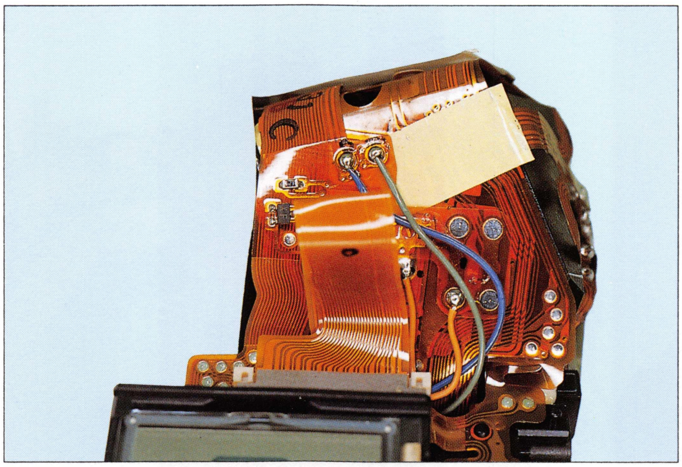


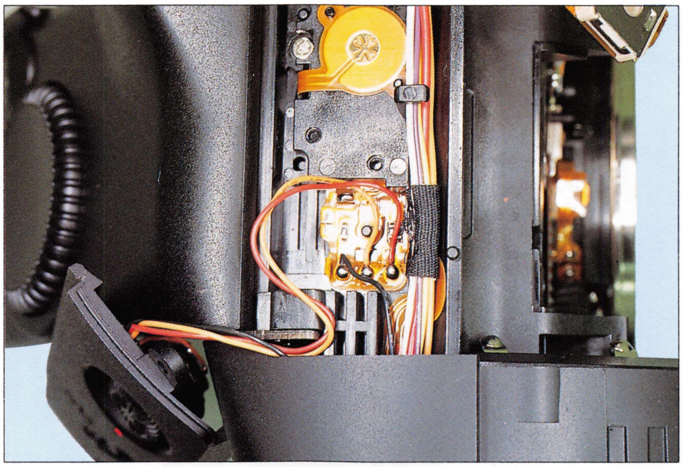


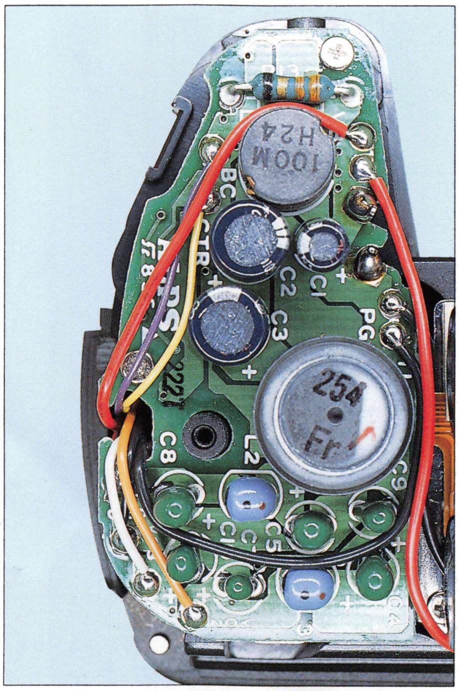


# WIRING LAYOUT

REF. No. C12－8201
C12－8204
C12－8205
C12－8206







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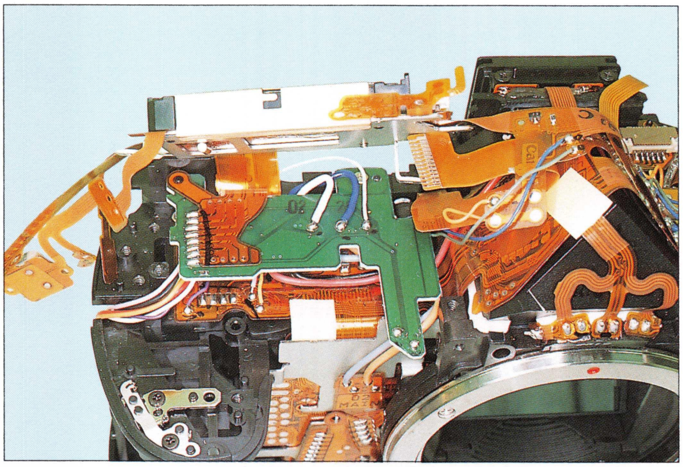
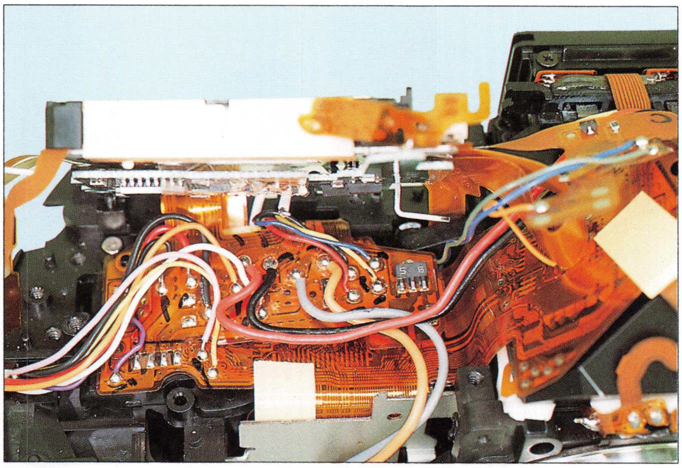
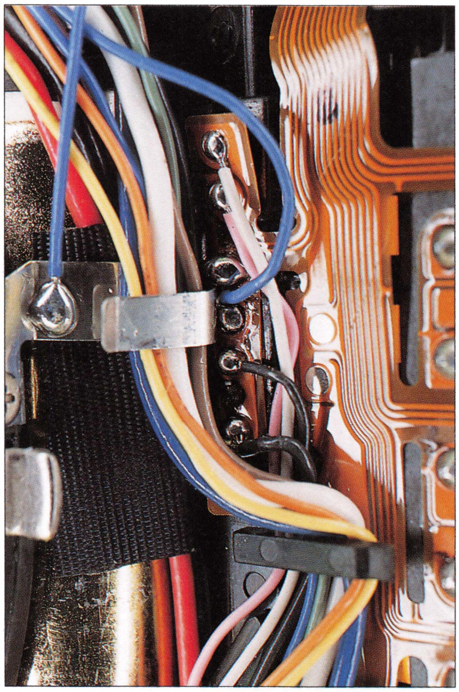
# WIRING LAYOUT

REF. No. C12－8201
C12－8204
C12－8205
C12－8206

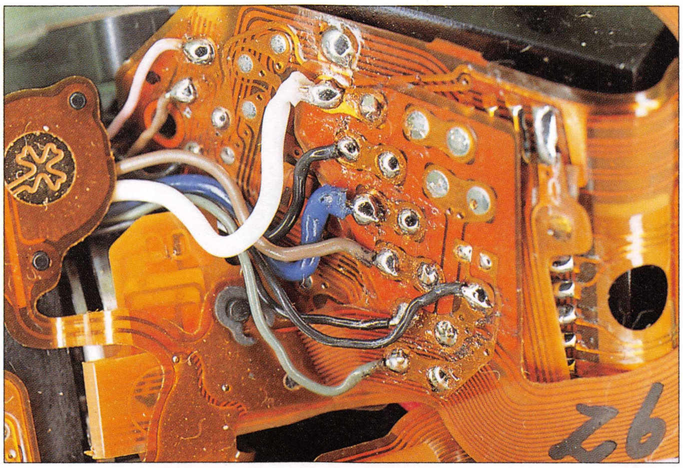


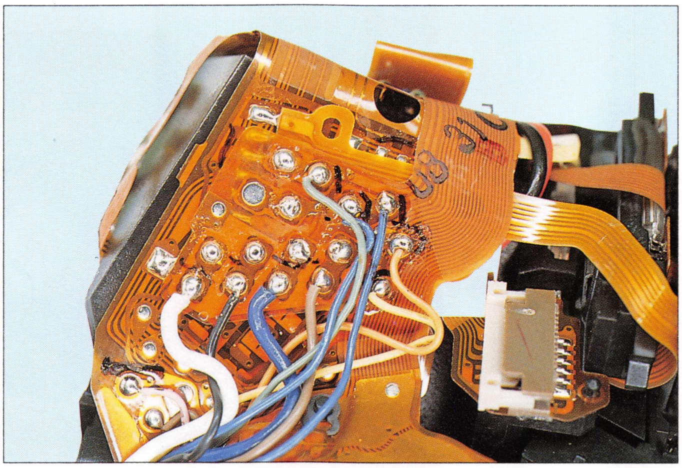


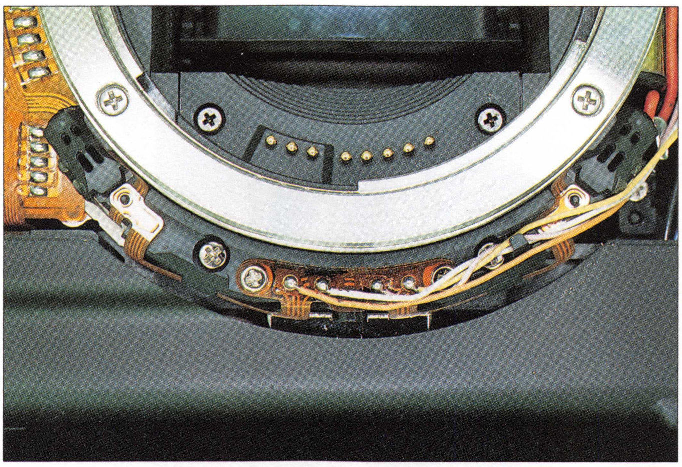


# WIRING LAYOUT

REF. No. C12－8201
C12－8204
C12－8205
C12－8206







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